DOCUMENT RESUME

ED 335 170 RC 017 973

TITLE	The Role of Agriculture in the Social and Economic Development of the Lower Mississippi River Delta Region. Proceedings of a Regional Conference (Memphis, Tennessee, February 26-28, 1990).
INSTITUTION	North Central Regional Center for Rural Development, Ames, Iowa.; Southern Rural Development Center, Mississippi State, Miss.
SPONS AGENCY	Lower Mississippi Delta Development Commission, Memphis, TN.
REPORT NO	SRDC-125
PUB DATE	Feb 90
NOTE	102p.
PUB TYPE	Collected Works - Conference Proceedings (021)
EDRS PRICE	MF01/PC05 Plus Postage.
DESCRIPTORS	Agricultural Education; Agricultural Production; Agricultural Trends; *Agriculture; Blacks; *Economic Development; *Farmers; Higher Education; Land Grant Universities; Marketing; Regional Characteristics; *Rural Development
IDENTIFIERS	*Lower Mississippi Delta; Regional History

ABSTRACT

The lower Mississippi River delta region comprises 214 counties in Louisiana, Mississippi, Arkansas, Missouri, Kentucky, Tennessee, and Illinois. The region is heavily dependent on agriculture and contains unusually high proportions of small farms, poor farmers, and black farmers. A conference planned by the region's 13 land-grant institutions and 2 rural development centers examined the role of agriculture in the delta's socioeconomic system and identified ways that agriculture could contribute to economic development. Keynote speakers reviewed the economic, social, political, and educational history of the region and offered a public policy perspective on the region and its potential place in world trade. Four papers discussed the concept of economic development through "value-added" food industries that increase the value of agricultural raw materials. Four papers examined alternative agricultural enterprises such as organically grown blueberries, and sustainable farming systems that are both ecologically and economically sound. Three papers discussed institutional support for delta agriculture, particularly agricultural education, research, and extension provided by strong systems of 1862 and 1890 land-grant universities. Three papers reviewed the special problems of black and limited-resource farmers. Three papers outlined marketing strategies to expand production of basic commodity crops, commercial vegetables, aquaculture products, and forest products. This proceedings record contains summaries of roundtable discussions and recommendations on each topic area. (SV)

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The Role of AGRICULTURE in the Social and Economic Development of the Lower Mississippi River Delta Region

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Southern Rural Development Center, Mississippi State University
North Central Regional Center for Rural Development, Iowa State University

in cooperation with
13 Land-Grant Institutions in the Seven State Region
(Arkansas, Illinois, Kentucky, Louisiana,
Mississippi, Missouri and Tennessee)

The Role of
Agriculture
in the Social and Economic Development of the Lower Mississippi River Delta Region

February 26-28, 1990
Memphis, Tennessee

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Conference Overview

Donald E. Voth

Together with Drs. Doss Brodnax and Pete Korsching, I played a role in the events that brought us here for this conference, and they have asked me to provide some background on how it came about. I will try to do that, describe how we hope to achieve our objectives, and make a few comments concerning my own perspective on the agriculture of the Lower Mississippi Delta region.

Several of us at the University of Arkansas, Mississippi State University and other land-grant universities, together with the Southern Rural Development Center, had been following the development of the Lower Mississippi Delta Development Commission from the time that Senator Bumpers and his staff introduced the legislation during the summer and fall of 1988. We made an initial effort to try and combine forces among researchers in land-grant and other universities, in order to provide whatever assistance we might to the fledgling organization.

During this early stage we became convinced of three things. First, for good or ill, agriculture is of fundamental importance to the Lower Mississippi Delta region and, consequently, must play a key role in any plan for the development of the region. This is true even if, as some might recommend, the Delta should try to liberate itself from its agricultural economy and heritage.

Second, a key set of institutions that have the ability to focus on the economic development of the Delta region already exist. This is the land-grant university system of the respective states--the agricultural experiment stations and extension services, both the original 1862 land-grants and the historically black 1890 land-grants. These institutions have long-standing mechanisms for performing mission-oriented, locally and regionally focused research and service. They also have specific mechanisms for engaging in multi-state collaborative efforts.

To those of us engaged in rural development work, the most visible and, in many ways, the most effective such mechanism is the regional rural development centers, in this case the Southern Rural Development Center at Mississippi State University and the North Central Regional Center for Rural Development at Iowa State University. These centers, incidentally, have expanded their mandate for networking and collaboration far beyond the original land-grant institutional base, to the benefit of everyone involved.

Thirdly, I have been persuaded from the very beginning that, notwithstanding all of the disclaimers of the Senator, his staff, and even the Commission and its staff, the name of the game is developing clout for the Lower Mississippi Delta region. Clout, above all things, in Washington, but also clout in state houses, among foundation boards and elsewhere. Clout to obtain dollars, as well as to influence the management and flow of dollars to see that they are effectively applied to the unique situation and needs of the Delta.

More and more the rural areas of the United States suffer from invisibility. Policies and programs are created by urban people to respond to urban needs while rural people, which still make up 43 percent of the state's population in Arkansas, are fundamentally unrepresented and overlooked.

Preparation and Planning for the Conference

When the Lower Mississippi Delta Development Commission issued its Requests for Proposals in August of 1989, these convictions led, quite naturally, to an effort on our part, centered out of the Southern Rural Development Center, to do something focusing specifically upon the agriculture of the Delta region. A proposal planning committee was quickly recruited from the land-grant institutions of the seven states; a proposal was drafted, quickly circulated and reviewed, submitted and funded.

Our proposal was actually somewhat more ambitious than what we are doing here, since we had considered a major outreach effort as well. In retrospect, though, this somewhat more focused conference is probably more appropriate, especially since the Commission already sponsored a major public hearing on agriculture here December 14. Our focus will be to exploit the expertise of our resource persons and you, our audience, among whom there are many who have spent their entire career dealing with agriculture, agricultural development, agricultural research, etc. We will concentrate on obtaining concrete recommendations for the Commission.

A day-long conference planning workshop was held here in Memphis on November 7. Some 15 representatives from both 1862 and 1890 land-grant institutions, the directors of the two rural development centers and several members of the Commission staff attended. The issue that dominated the agenda was selecting the areas to be addressed at the conference.

Twelve broad issues had been suggested in the proposal; others were added and some of the original ones were expanded. Then we went through an iterative process of prioritizing and combining issues, finally ending up with the topics which appear on your program, and which will be addressed during the next two days. Different members of the planning group were assigned the responsibility of recruiting those who will address you here. We are very fortunate in the quality of resource persons who have agreed to help us with this endeavor.

What We Hope to Accomplish and How

The objectives of this conference, as stated in the brochure, are to: (1) examine the role of agriculture in the socioeconomic system of the Lower Mississippi River Delta region, (2) identify the major constraints to enhancing agriculture's contribution to the socioeconomic development of the region and (3) to make recommendations for eliminating those constraints and capitalizing upon the opportunities that agriculture offers for future development of the Delta region. To be more specific, we are here to help the Lower Mississippi Delta Development Commission make concrete and practical recommendations for improving the welfare of the people who live in the Lower Mississippi Delta region, focusing specifically upon the role of agriculture.

We will try to accomplish our conference objectives in the following way: first, for each topic a select panel will make a presentation. These panel members have already provided us with their papers, which will be given to the Commission for its use and will be published in the conference proceedings.

The panel presentations will be followed by open roundtable discussions. The facilitators will have a set of questions designed to guide the discussion so as to help identify key constraints, ways to overcome those constraints and recommendations for policy initiatives. The recommendations that emerge from these roundtable discussions will be compiled and presented at the policy forum at 10:30 Wednesday morning. The results will then be compiled after the conference for publication and presentation to the Commission.

This is the formal structure we propose. However, we know that the most interesting and profitable things that happen may not be those that are planned, but those that result from informal discussions that occur at the breaks, in the evening, or at other gaps between the conference structure. We hope you will exploit these opportunities.

Some Background on the Role of Agriculture in the Delta

Our task here is to look forward. To do so, however, one must usually understand and come to grips with both the past and the present. Agriculture has played, and continues to play, a key, defining role in the socioeconomic system of the Lower Mississippi Delta region. You have in your hands a document that was recently completed by Drs. Lynn Reinschmiedt and Bernal Green and published by the Mississippi Agriculture and Forestry Experiment Station, which provides an excellent description of the economic structure of the Delta region and the role of agriculture in it. Before making a few comments about agriculture in the Delta, let me say a few words about what the Delta is.

The Lower Mississippi Delta Development Commission includes in its area of attention 214 counties in seven states. These counties are very heterogenous, including urban counties, such as the one in which we are located now, and rural counties. Among the rural areas are hill counties (Ozark and Pine Woods counties), many of which are very poor. Some, however, like Baxter County, Arkansas, have experienced a certain "rural renaissance." The core--and I suggest--the defining counties of the Delta are the 40 to 50 rural (non-metropolitan) counties one or two counties deep along the Mississippi River extending from Alexander County in Illinois in the north, virtually to New Orleans.

This core represents a set of counties that share a common history of agriculture and agricultural development. To a large extent they also share a common social structure and social problems which have their roots in its agriculture and agricultural past. Some key characteristics of agriculture in the Lower Mississippi River Delta region follow.

Population: A major defining feature of the population of these Central or Core Delta counties is a high percentage of rural, black people. In a relative sense, the region also suffers from a wide distribution of virtually all measures of socioeconomic status; with relatively high incomes, relatively low incomes and a small middle class. Because of the large size of the lower class, average measures of educational achievement, health status, etc., are all very low. Because of the wide disparities one finds in the Delta region, however, averages are more misleading here than elsewhere.

These rural counties of the Lower Mississippi Delta region have experienced net out-migration for quite a long time, a pattern that continues to the present. This out-migration affects the population structure, drawing away the young adults and leaving the children and older people in place.

Favorable Physical Environment: The Delta has soils which, once the original clearing and draining had been accomplished, are unusually fertile and productive, but also relatively flat. The soil is thereby fairly easy to exploit, the growing season is long and, in large portions of the area, water for irrigation is available. Thus, it is a region that has the capability of producing a wide variety of agricultural crops, commodities and/or products. The Delta would therefore seem to have great potential for more diversification than is now evident.

The Mississippi River (and its tributaries): The River(s), which allowed the early white settlers to come to this area, became a major defining feature of this region's agriculture. Partly because of the easy transportation provided by the river, Delta agriculture never included much small-farm subsistence farming; large-scale, commercial commodity production for world markets was a possibility from the start.

Even more today, the river dominates and tends to define the agricultural production of its watershed, because of the efficient access it affords to world markets. Our rice economists inform me that, although many Arkansas producers may have difficulty competing with the producers of Southeast Asia purely on the basis of cost of production, the efficiency of the distribution system available to the Arkansas producer contributes materially to making him or her competitive in world markets.

Agricultural Development in the Delta: It was not long ago that cotton was king in the Delta. Cotton was produced and shipped out--presumably to textile mills first in the Northeast and then, as these mills moved south seeking cheap labor, to the Carolinas--but also around the world. It is surprising to some how recently the Delta region was transformed from a large-scale, labor intensive agriculture dominated by cotton, to the present system, which has incorporated both the mechanical and the biological/chemical transformations of modern agriculture.

I'm sure some of you in this audience remember when a Delta farm of 500 acres might employ a virtual army of 200 to 300 people. A farm which now can easily be managed by a family--who rent another 500 to 1,000 acres on the side in order to try and generate an acceptable family income, and to use their skills, time and machinery efficiently. There is no other area of the U.S., except areas of similar agriculture in other southern states, in which so many people with so many disadvantages--many as former slaves and most as victims of the share-cropper system--were displaced so rapidly and so recently by the process of agricultural transformation that we call agricultural development.

Current Characteristics: What we have now is a highly efficient system of commodity production with extraordinarily efficient access to world markets that employs relatively few people. Even though people have been leaving the Delta in large numbers, there is still a much larger labor force than the current form of agriculture can support.

Although the Delta does have a significant amount of manufacturing, and the value of the dollar is back to a reasonable level which allows some progress in the development of alternative employment opportunities, it still has more people than jobs. Unfortunately, as was true of large parts of the Ozark and Quachita regions because of the out-migration of the 1930s, many of the "best and brightest" have left for better opportunities in the cities of California, the Midwest, Texas and the East Coast.

Still, the agricultural portion of the Delta's industrial base--defined as earned income from farming, agricultural services and related manufacturing--is its largest component, making up nearly 40 percent in the 1984-86 period (Reinschmiedt and Green, p. 6). Farming itself accounts for a remarkable 18.7 percent of earned income in this core Delta region. This is an agriculture that focuses primarily upon commodity rather than product production, in part because of its access to river transportation.

Although the agriculture of the region shows considerable diversity, this core Mississippi Delta region is, more than any other region of the U.S., dependent upon the sales of federal farm program crops. These, including soybeans, cotton, rice and wheat, provided 82 percent of gross farm income in 1982 (Pesek 1989, p. 58). Thus, the agriculturalists of the region, as well as those businesses and enterprises linked to it, are unusually dependent upon federal farm policy for their well-being.

Finally, it is an agriculture that suffers from an attitude or image problem. It is viewed with extreme ambivalence by many in the Delta. Especially to black youths, its definition is the past, and drudgery if not slavery. To others it presents an image of unsophistication, rednecks and exploitation.

It would be folly for those advocating the social and economic development of the Delta to recommend ignoring and walking away from the agricultural base into the brave new world of services, high-technology and small business start-ups--or even industrial smokestacks. It needs to build upon this agricultural base that has within itself the components for high technology in the sciences of agriculture, of services associated with supporting and financing the agricultural base, of all the beautiful things associated with small businesses and large-scale, industrial establishments in food and fiber processing.

It seems to me, we must heed the implicit recommendation of the National Academy of Sciences recent book on alternative agriculture, which says when discussing the Delta: "Relatively few research and policy studies on regional alternative systems have been undertaken. Those that have often focus on a particular crop or policy and do not attempt to fully account for the complexity of farm management decision making." (Pesek 1989, pp. 64-65.)

What is needed most is an effort to focus on the region as a system, considering all aspects of that system and creating development plans based on this regional analysis. Many opportunities and possibilities are inherent in my brief, superficial and rather negative assessment of Delta agriculture. We hope you will help us further such a regional development planning process, and help us find ways to benefit from the opportunities inherent in Delta agriculture to improve the welfare of the Delta people.

Donald E. Voth is professor and former acting head of Agricultural Economics and Rural Sociology at the University of Arkansas. The focus of his research and applied activities has been upon community development, rural and agricultural development, evaluation of development programs, citizen or public participation in development and farming systems research and development as an approach for small farm development. He received his Ph.D. from Cornell University.

References

Pesek, John. *Alternative Agriculture*. Washington, D.C.: National Academy Press, 1989. (Prepared by the Committee on the Role of Alternative Farming Methods in Modern Production Agriculture of the Board on Agriculture, National Research Council, of the National Academy of Sciences).

Reinschmiedt, Lynn and Bernal Green. *Socioeconomic Conditions: The Mississippi Delta*. Mississippi State, MS: the Mississippi Agricultural and Forestry Experiment Station, Bulletin No. 965 (December 1989).

The Policy Perspective of the Delta Region

Bob Bergland

In December of 1976, I had just been elected to my fourth term in congress and was talking with my father about Jimmy Carter inviting me to join his administration as Secretary of Agriculture. Dad said that was without a doubt the dumbest idea he had ever heard in his life; that it was a *no win* job. I didn't follow my dad's advice, and took the job.

I had been on the road about two weeks when I arrived in Iowa to a meeting of the corn growers association. I was greeted at the airport by a delegation of corn producers who said the price of corn was too cheap, we are all going broke, you have got to raise it or everything is going to fall apart. I completed my meeting in Des Moines and went to Atlanta where I was greeted at the airport by a delegation of chicken producers. They said the price of corn was too high, we are all going broke, you have got to lower it or everything is going to fall apart. At that point I knew my father was right. Some things you can't win, so you just do your best.

I recently finished reading a biography on General George Patton, the famous World War II general. One particular incident in the life of this "rough and tumble" general officer of the United States Army, was when General Eisenhower stripped Patton of his command because he failed to follow orders. Apparently he was notorious for not following procedures to the last letter as was generally expected of field officers. When asked why he did not follow the manual that described, prescribed and directed general officers of the United States Army, Patton replied, "I don't follow the book because the enemy hasn't read it," explaining that in battlefield conditions there are times when you have to apply ingenuity. There are times when events will drive the tactics and you have to apply your own resourcefulness. Patton was right, subsequently reinstated and went on to earn great credit during World War II.

The fact is that our lives are often driven by events that we can neither control nor predict. I don't know of a single person in official standing who predicted the crumbling of communism in Eastern Europe and the Soviet Union. I don't know of anyone in positions of authority who thought it would happen with hardly a shot being fired. I spent a lot of time in those countries and long believed that communism would fail because it could not produce: it could not produce food, could not produce meaningful articles for the consumer market--it failed in many respects. I believed, however, that the citizens would rise up in armed rebellion and throw the rascals out in a civil war.

Instead, we have seen unbelievable changes take place in the last six months. It proves that we cannot afford to depend on or be driven by these manuals, these econometric models or any forecast that does not allow for the events which persons cannot predict. These models and forecasts assume that humans act in rational ways, but we do not. We do irrational things on an impulse, and so the world is driven by these acts of impulse. When trying to direct our affairs we need to work with short-term tactics.

One thing is certain, the United States will be more and more effected by what happens in places like Nicaragua or Poland. There was a time when we weren't really concerned with what took place in a foreign land. We were a powerful, isolated nation who dominated our sphere. That has now changed. The Japanese seem to have a corner on VCRs, and other parts of the world's economy seem to be dominated by certain sections, in part because of natural resources.

That is where the U.S. comes in. We have one-half of the world's good land and are the world's largest exporter of agricultural products. Nearly one-half of the world's trade in grain and cotton originate from the U.S. because we have land, rainfall, know-how and tremendous capacity. In trading grain, therefore, the U.S. dominates, just as certain industrial countries dominate in manufacturing various products.

The fact is, however, that we are to a greater and greater extent affected by what happens on a global scale; we cannot afford to live in isolation. We have to understand what is taking place in Mexico, or Nicaragua, or Bangladesh as best we can. It means we need to be informed and able to take advantage of any opportunities which may arise. It is no longer good enough to sit back and wait for these opportunities to come to us. We need to go out and hustle.

In the food business, we know that national governments are going to protect their own industry. There is a raging argument going on in Washington, D.C. about whether or not governments have a legitimate role in agriculture? There is a political school that says it is to the advantage of the U.S. to eliminate crop price supports and quotas, and anything that smacks of control; that what the world needs is a free, competitive, unfettered marketplace. I couldn't agree more.

However, what the world needs and what the world gets are two different things. Normally, countries of the world are not willing to open their gates and allow the domestic farming economy to be devastated by a flood of low cost imports. Mexico, for example, will not open its doors and allow the country's fragile grain economy to be shattered by importing U.S. grain which is in surplus and happens to be cheap. As the Mexicans know, they can't depend on us. If we have a drought, which has happened a couple of years back to back, then the Mexicans are left high and dry.

The fact is that politics are going to be an important part of the international debate in agriculture. The U.S. needs to recognize the importance of national governments protecting their industries so that they may protect their consumers. We can also derive from the records and data that the largest growth in agricultural exports will be to the third world.

There is a great deal of interest in Japan on the so called *level playing field*, and big quarrels about whether the Japanese are playing fairly. Just as interesting are arguments about the European economic community. The truth is, however, that 40 percent of U.S. exports go into developing countries. They represent by far the biggest potential for future growth and development.

The problem is that these countries do not have cash to pay with; they do not have hard currencies. Any trading arrangement that might take place with the third world economy needs to be resourceful in adapting to their soft currencies; things like barter which can be converted to cash. We in America are not accustomed to dealing in a barter economy, so we tend to overlook some very attractive and interesting new markets simply because they do not have cash, which is the preferred currency in the U.S.

The truth is that we need to be a great deal more resourceful in helping the emerging countries of the world that have tremendous populations and for whom an improvement in diet is probably the number one priority. The U.S., therefore, has a great stake in how the world is able to cope with matters relating to poverty, disease, ignorance, illiteracy and all that is associated with poor people in developing countries. We have a great stake in seeing that the U.S. employs wise and proper counsel in the development of our foreign policy toward those populations in Bangladesh, Brazil, China, etc. The numbers are just enormous. Agriculture exports are going to be tied for better or worse into the foreign policies of the U.S. and the manner in which the world deals with the questions of poverty.

One of the great challenges confronting agriculture is how to diversify these rural communities. Remember 1970-73 when our world had two bad crops back to back, and the Russians changed their buying policy. Instead of tightening their belt and rationing as they had traditionally done, they entered the markets in a big way. Grain prices doubled in 18 months. Land values tripled in seven years and people were led to believe that we had solved the farm problem. People went on bidding up farm land and everywhere you looked in the U.S., inflation seemed to be making people rich. The commodity business, however, is very fickle by its nature.

When soybeans hit $10 a bushel the Japanese, who had been depending on the U.S. as a sole source of soybeans, decided it was time for them to diversify their sources. They invested heavily in soybean production in Brazil, which is what put Brazil in the soybean business; the same with wheat, cotton and corn. During that period in the early '70s, the high prices generated signals in areas of the world that had not been in the grain business, but suddenly found it profitable. The bust came four years later.

In the U.S. it was a major bust because it took the form of reduced land values. Land banks, savings and loans, and banks in general that had mortgaged or lent mortgaged money in those contracts suddenly found that their borrowers were bankrupt. There was devastation. The lesson in all this is that depending on a single commodity is inherently very dangerous. The world's market is so unstable that it is foolhardy for any country or community to place all its eggs in one basket, whether it be a soybean basket, a cotton basket or any other basket.

What I've just said runs counter to what is generally taught at the great land-grant universities. I am a graduate from Minnesota and the theme at my university is specialize. Become good at something and specialize, get as large as you can on that scale. The downside is that you also become vulnerable and we know the consequences of that.

Sixty years ago when the Rural Electric Association came to pass, there were seven million farms in the U.S. Every farm was like the next; a few cows, a few chickens, a few horses, a garden--probably a dozen enterprises. What everyone had in common was that they were all poor. Following World War II machinery was invented and we saw a tremendous change take place in the structure of agriculture.

Between 1940 and 1970, 20 million people left the farms and ranches of the U.S. and looked elsewhere for a job. It is the largest migration in the history of the world, and occurred in this country in my lifetime without notice. There was a quiet, peaceful revolution. Those people who had been working on farms doing hand labor, milking cows or picking cotton, suddenly found that machines had displaced their human energy. We have witnessed in our lifetime a heavy outmigration of willing labor who can no longer find a profitable job in farming.

As a result of this tremendous change in the application of high technology, today we have 2.2 million farms in the country, down from seven million. That is no big surprise. The real shocker is that only 300,000 produce about 80 percent of everything sold. The concentration in perishables is almost complete: about 10 companies dominate the chicken business, another 10 companies dominate the turkey business, another 10 companies dominate the pig business, and five packing companies and their affiliated industries dominate the cattle feeding business. The same can be said of some of the household shrubs and a variety of perishables; they are heavily dominated by a relatively small number of high powered, well-managed, very aggressive and very effective farming companies.

There are approximately two million small farms in the country, most of which are worked by part-time rural residents with a full-time job. We surveyed members of electric cooperatives and asked if they liked the circumstances of living in a rural community and running a small farm that provided some extra income, in addition to a separate full-time job. They believe they have the best of both worlds. We surveyed people living in metropolitan areas who said if they could find work back home in rural Mississippi or rural Georgia, they would move back. There are certain inherent advantages in living in a rural community and it is a preferred place to live; but they can't go back because there are no jobs.

One of the main challenges confronting rural leaders is how do we increase the job opportunities in these rural communities. Large scale farming will take care of itself. Whether it will do well or do badly, I don't know. One thing is clear, however; large scale farming is not going to employ more willing workers, or if they do it will be at a very low wage scale. To look for more jobs in rural areas, we need to look at generating new ideas--adding value to produce already grown here.

Many of you on this program will be talking about some of the new biological farming techniques, or sustainable agriculture. These techniques have generally been discredited as being old fashioned, but I regard the experimentation that is going on in sustainable agriculture to be critically important. The agriculture industry of the U.S. uses 12 petroleum calories to bring one food calorie to the dinner table. We have the highest petroleum energy requirement of any food industry in the world, bar none.

Our entire food industry is based on the presumption that oil prices will always stay low; we know that is not going to happen. The Soviet Union passed its prime in oil production nine years ago. The U.S. passed its peak about 13 years ago and country after country thought of as traditional or powerful oil producers are also passing their peak. There is no doubt in my mind that oil and gas prices will climb, the question is how much and how soon. The impact on commercial farming as we know it is going to be devastating. It takes 40,000 cu. ft. of natural gas to make one ton of ammonia fertilizer, and it is indispensable feed stock for ammonia. As long as gas prices are cheap and plentiful, everything is fine, but the prices of gas are tied to oil prices.

Commercial agriculture as we know it is facing some very important challenges. It is therefore important to be experimenting and learning all we can about sustainable agriculture, which reduces the dependency on imported oil. In January of this year, for the first time, we imported more oil than we produced. This trend will only get worse, and yet it cannot continue. We have to look at new farming techniques, at adding value to the crops which are already grown here.

This region has an enormous advantage in the U.S. in its competitive posture because of its proximity to the Mississippi River and the Gulf of Mexico. Its tremendous shipping capacities are an asset beyond believable value. My home is in the north end of the Red River Valley, 10 miles from Canada. There is a lot to be said for that cold northern climate; it tends to grow character. One thing I can say is that we're on the end of every railroad line and 60 miles from the headwaters of the Mississippi River. We're about as far away from any place as you can be and we pay the freight both ways. We pay the freight for the fertilizer coming in and we pay the freight for the grain going out. Here you are on the banks of the Mississippi, the waterway to the world.

World trade is increasing and proximity is a tremendous asset. What you need to do is figure out how to build on this asset. You have good, productive land, some of which came off my place down the Mississippi River. What we need is to take these resources and improve the structure and income opportunities. Some crops are fading and dying, and it is necessary to diversify and look at new crops. We need to find substitutes that can generate as much income per acre as the old crop, which means we need to know more about fruits and vegetables, marketing, processing and handling.

I believe Mississippi is the number one catfish producer, which is a tremendous market item. I can hardly find corn fed catfish in Washington, D.C. because they sell out before it gets there. It is a very popular food item, growing in commercial importance. It appears to be a stable product.

I want to conclude by emphasizing that development must start at home. A few years ago, we did a study of the Great Society of President Lyndon Johnson. LBJ was a very activist president, and some unkind critics said he had more solutions than there were problems. The truth of the matter was that the President's programs in the Great Society of the 1960s were powerful and reactive, he was never lacking for confidence. As time went on, however, many of these programs fizzled out. Rural Electric Cooperatives commissioned a student to find out why some of these programs survived (i.e. the Green Thumb program and Headstart) where others failed.

The single common denominator was local leadership. Those programs were kept when strong local leadership believed the program made good sense. Those programs primarily federally funded that locals believed made no sense, were dropped. The key component was local leadership.

We know that in the business of economic development, it all starts at home; not at the state capitol or in Washington. It requires local public and private leadership and support. I am not an advocate of Operation Bootstrap, which means pulling yourself out of your own miseries by your own will. It is an interesting idea, but it doesn't work. There will come a time when you will need help, whether it is from the Small Business Administration, a federal agency or a state agency; from your university or your extension service; or from the National Conservation Service.

Help is needed in these matters, but help can only be useful if invited. If the local leadership says they are done, there is nothing we can do. It will be a self-fulfilling prophecy. We in the Rural Electric Cooperatives are therefore constantly urging our cooperative leadership and other local public and private leaders to take a good hard look at their community to find out what their assets are, what the liabilities might be and how to put together the best possible team to conquer the world as seen here in this region of the Mississippi River.

Bob Bergland is executive vice president and general manager of the National Rural Electric Cooperative Association and as such is the leading spokesman for its member systems. In 1970, he was elected to the U.S. House of Representatives and was re-elected in 1972, 1974 and 1976. Serving from 1977 to 1981, he was the first farmer since 1940 to serve as Secretary of Agriculture.

The Historical Perspective of the Delta Region

Charles A. Walker
Jacquelyn W. McCray

The Lower Mississippi Delta region is often referred to as the poorest section of the South. Because the South is without a doubt the poorest region of the nation, it is safe to say that the Lower Mississippi Delta region is home to the poorest of our country's poor. Although a distinction must be made between the Lower Mississippi Delta and the rest of the South, the history of the Delta (and consequently its lowly status on the economic and social ladder of society) must be viewed in the context of the history of the South as a whole.

Certainly all present recognize the very difficult task I have before me in attempting to *briefly* describe the complex social, economic, political and cultural traditions that evolved over several centuries of strife and conflict in a region whose boundaries are as much cultural as climatic and as much political as geographic. As one student of the Southern region said, the South is best characterized as a "state of mind."

Having spent the early years of my life as a child in a poor Delta county in Arkansas, I have lived the Delta experience of the 20th century. I know the economic hardships. I lived the Jim Crow politics that prevailed the region; but still, understanding the complexities of life in the Mississippi Delta is an arduous task. Therefore, several volumes on the history of the South both pre- and post-civil war were consulted in an effort to isolate the most potent social, economic and political characteristics associated with the evolution of the region.

Most of the facts presented today are recorded in a book by John Ezell, *The South Since 1865*. This work, published in 1963 by the Macmillan Company, is viewed as one of the most complete and accurate accounts of this period in history. It recognizes the complexities of the time and presents facts and figures in the context of the cultural climate in which they existed.

In the introduction to the book, Ezell quotes H. W. Odum ... "The rest of the nation never understood the South, and the rest of the nation never ceased to enforce its moral principles; and the South never ceased to resist and resent" ... "Decades of things as they are, remaining as they are, changing in no appreciable respect, had built in the Southern mind a strong inbred conservatism, and years and years of enforced stasis had built into the Southern mentality a skepticism of change and a strong inclination to let things be."

It is my intention in the comments that follow to describe the development of the Delta region from pre-civil wars days to the present while noting the significance of this "Southern mentality."

The Economic and Labor Pattern

The Southern caste system and economic patterns had their beginnings in the early colonial period when the region committed itself to the large-scale production of labor intensive agricultural products, principally cotton. These excessive labor demands led to the adoption of slavery, and those who succeeded in acquiring large holdings of land and labor developed into the aristocracy of the South. Cotton became so important that in 1855, the book *Cotton is King* heralded cotton as the most dynamic force of the 19th century. It went on to suggest that the South controlled power through its production of the plant. The rich fertile lands of the Mississippi River and the mild climate of the region were both great facilitators in the cotton heritage of the region.

Equally as important as the effects of cotton upon the economy were its effects upon the people. The agricultural way of life (the slave-master social stratification) dominated all phases of life; and for both economic and social reasons, the South was bent on maintaining a great void between the white and black races. Contrary to some beliefs, only a small minority of the white population owned slaves, but the whole system was based on a well-ordered society, with well-defined classes where each group--including the non-slaveholding farmers, the business and professional men, the yeoman farmers (the largest group of all), the freed Negro and the slave--knew its place.

The South's devotion to agricultural production made the region an exporter of raw materials supporting the industrial and manufacturing North while failing to develop an industrial base of its own. The region had also made its choice against the democratic public educational system of the North and had determined that education should be selective, private and concerned with the training of leaders.

Although some may believe that generally the issue of slavery divided the country (unquestionably the slavery issue was important), other differences in Northern and Southern opinion regarding industrial development, education and even religion helped to create the resistance to Northern ideas that ultimately led to the civil war.

In addition to military defeat, the four years of civil war left the South emotionally wrought and physically destroyed. A $2 to $4 billion investment in slaves had been washed out and except for a small number of speculators and war profiteers, everyone was impoverished. The year before the war, of the top 10 states ranked nationally by per capita wealth, six had been Southern including three states in the Delta region: Louisiana (2), Mississippi (5) and Kentucky (10). Twenty years later, not one Southern state ranked in the top 30.

The plight of former slaves was pathetic. Upon learning of their freedom, thousands took to the woods with nowhere to go. Negro colonies sprang up in the cities and sanitary conditions were deplorable. Epidemics swept through unchecked, and without proper food, clothing, shelter and medical care, estimates of mortality were as high as one-third. According to former slave, Frederick Douglas, the black man was "free from the individual master but a slave of society." He had neither money, property, nor friends.

Still in the aftermath of the war, the former slave was and continues to be a part of the problem and the solution to conditions in the region. An attempt to resume agriculture on a large-scale basis proved difficult in the face of heavy taxes, lack of operating capital and an uncertain labor supply.

The share-crop or tenancy system grew out of this post-war adjustment. This new technique made it possible for planters to obtain labor without paying wages, and for landless farmers to get soil without buying it or paying cash rent. For the freed slave and the poor whites, the share-crop arrangement appeared to be expedient. As early as 1880, one-third of all farmers in the lower South were tenants; and by 1920, the percentage was two-thirds.

In addition to the share croppers, a sub-tenant class of wage laborers developed who moved or drifted with the demand for cotton pickers. It is reported that in 1930, more than 37 percent of blacks engaged in agricultural labor were wage-laborers, another 50 percent were share tenants or croppers and only 13 percent were actually land owners. At the same time, 50 percent of whites in the region were either wage-laborers, tenants or share croppers.

Developing simultaneously with the share-cropper system was a unique credit system created from the region's low capital base, "the country store." Most states adopted crop-lien laws, such that a tenant could not dispose of his crops until he had paid all back rent and bills at the local store. These stores often had carrying charges of 25 percent to 75 percent. The tenant or sharecropper had to take the landlord's word as to the price received, and the merchant's statement on what had been advanced and how much interest had accrued. If the bill exceeded the tenant's power to pay, he was required to trade with the same merchant the next year at an even higher rate of interest. Many of these "country stores" soon became the "company store," as more and more store owners became plantation owners through the acquisition of both small and large farms from bad debts. These company stores developed into a new form of slave holdings.

Although Tennessee Ernie Ford's hit "Sixteen Tons" described the lives of Appalachian coal miners, the line "I owe my soul to the company store" was no less true for the sharecropper on the great cotton plantations of the Mississippi Delta. One of the most famous was a 37,000 acre plantation developed in Mississippi by this method.

Well into the 20th century, cotton was so important to the region that the whole area's life was characterized by activities and attitudes resulting from the cultivation of this crop. The employment of people in this profession both black and white, and other mediating factors in the region, caused a chronic social and educational depression which was characterized in the lifestyle, art and music of the people.

For example, this region gave to the world a new musical form, "The Blues," which has served to constantly remind us of the longstanding behavioral depression associated with the drudgery experienced in the cotton fields and other deplorable conditions. The need for hand labor resulted in field labor by women and children, thus encouraging high birth rates. Black citizens, second class as they were, still provided a useful function in this cotton dominated society.

Reconstruction and Politics

The fact that nothing has been said about reconstruction is not an oversight. Some minor, though short-lived, victories by blacks in most states in the region were accomplished under a political environment created to appease the North and to solidify freed slaves as political allies. During this brief period, black voter registrations were greater than white. Throughout the South, political factions vied with each other for the black vote. Finally, the agrarian reformers launched an attack against the freed slaves as a way of destroying the power of the dominant political party.

This signaled the end of the reconstruction era, and the disfranchisement of the black population of the region took on proportions that tended to rival the institution of slavery. The tactics used are too numerous to mention but most included intimidation and violence. These were employed until the rise of Jim Crow politics that legalized statutory devices such as the poll tax, reading and property ownership requirements, and gerrymandering political boundaries to render the black vote ineffective. When Mississippi (a state with a black majority) passed suffrage reform measures that successfully reduced the black vote in the state by 70 percent in a single year, the dye was cast and other Southern states quickly followed with similar legislation.

The major issue became the maintenance of white supremacy and everything else was subordinated to implementing and perpetuating this Southern ideology. Along with the drive to isolate blacks politically came an effort to segregate them socially and economically as well. Such political and social disfranchisement was supported by Jim Crow politics that expressed itself in extreme racism and violence sanctioned by the political powers of the South, and largely ignored by the rest of the country.

Although seldom mentioned, two basic factors underlay the defense of segregation: the desire to end economic competition, and "race purity." Determination to keep the black man in his place made whites passionately resent any gesture which seemed to suggest equality. The everyday use of violence and force against the black man was viewed as *just* and *patriotic*. Consequently, there arose a class of Southern politicians that made political capital out of the fears of racial equality.

Education in the Delta

As has been previously mentioned, attitudes toward education also contributed greatly to the "Southern mentality." Pre-war education was selective and geared to producing leaders, and the poverty of the post-war South made even light taxation seem oppressive. Education then became viewed as a luxury rather than a necessity.

Educational reform was difficult because public education was viewed as a "Yankee" attack upon Southern institutions. Nonetheless, Northern monies and teachers came to the South following the war to teach freed slaves and poor whites to read and write. By 1886 more than 150,000 freed slaves were enrolled in school. Southern whites were hostile to this Northern evasion and often ostracized and terrorized teachers, and vandalized and burned the schools.

Coincident with the drive to educate the black population rose the question of what type of educa-

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tion the freed slave needed. Should the education be classical or vocational? Since classical education (the kind offered white students) was thought to reek too much of racial equality, Southerners contended that if a black needed education at all it should be done in a way to make him a more "desirable servant or laborer." Reluctantly accepting vocational education as suitable for the subservient role of blacks in society, all Southern states gradually moved to provide some type of separate public education for blacks and whites.

Moving into the 20th century, Southern education was stymied by poor economic conditions, a sparse and isolated population, and a bi-racial system that perpetuated white dominance. The enrollment of black children in the South ranged from 23 percent in Texas to 46 percent in Tennessee. At the same time, however, only three states had more than 50 percent of white children enrolled in school. Kentucky was the only state with a compulsory attendance law; in the rest of the country, all but two states had compulsory attendance laws. Southern school terms averaged less than 100 days a year, while the national average was 145. Only one Southern pupil in 10 who enrolled reached the fifth grade and only one in 70 completed the eighth grade.

Socioeconomic problems continued to plague Southern education. The fact that the bi-racial system was more expensive to maintain, coupled with a lower regional standard of wealth, makes it less than surprising that Southern schools simply did not have a resource base from which to grow.

The full impact of the massive out-migration of blacks and whites from the South during most of the middle decades of the 1900s is generally not recognized. Not only did poor blacks and whites exit the region, but this migration also took many of the South's ablest people. Even today, nearly one-half of the Southern-born scientists of eminence reside elsewhere. This loss of productive talent left the South a land of the very young and the very old, further complicating the problems of education, relief and the like.

Voter Registration and the War on Poverty

Moving into the middle of the 20th century, Southern politics were further complicated by its unique history and required even greater degrees of political persistence. The civil rights movement and its concomitant impact on school desegregation created a volatile climate in a region steeped in racial inequality, a legacy of poverty, an economy based on an unprogressive agricultural system, the lack of political participation by the masses, and an overriding determination to maintain white supremacy. The fact that the civil rights struggle is mentioned only briefly certainly is not indicative of the impact the movement had on this region, but rather is reflective of the time limitations imposed by this program. We all must recognize that the South's resistance to the civil rights movement of the '60s was a reflection of a desperate cry to maintain the so-called "social and economic" balance of the region.

In addition to the massive voter registration drives and sit-ins in the South that were supported and maintained primarily by black college students from the South and white sympathizers from the North, the political struggles of the '60s were also being fought in Northern industrial cities. The riots created by a sense of hopelessness and helplessness in our nation's cities, and the assassinations of John and Robert Kennedy and Martin Luther King, both stirred up the social conscience of the country. This resulted in the Johnson administration's war on poverty.

A massive attempt was made to cure decades of racial inequality in the South and a "look in the other direction attitude" of the rest of the country, that had resulted in a sizeable underclass of poor blacks and whites in the rural South and in the urban ghettos of the North. Among the ambitious undertakings associated with this period were increases in food distribution to the poor via Food Stamps as opposed to the old commodity program, increased housing subsidies for both rental and owner units, educational reforms such as Head Start and various titles to existing educational legislation, community action agencies and programs, and a host of other social initiatives designed to pull the "left behind" into the mainstream of American life.

Through years of government spending, recessions, and a shift to a more conservative political environment, the war on poverty is behind us, but poverty remains. According to Daniel Patrick Moynihan, "In the war on poverty, poverty won." Other political analysts such as Charles Murry assert that the social programs designed to improve the condition of the poor have failed and actually harmed their would-be beneficiaries. Many reasons abound to explain how the good intentions went awry, but that is not important today. What is important is that we have come to a point of social decay, moral destruction and economic stagnation that hovers over the 214 counties in the seven-state Mississippi Delta region to a greater extent than in any other section of the industrialized world. In this region, poverty seems to be institutionalized. Very recently, in a conversation regarding the plight of the Delta region, a knowledgeable social activist suggested that "poverty *is* the industry of the Delta."

In closing, I want to leave with you the insights of W. E. B. DuBois, a black Massachusetts-born scholar who studied at Fisk, Harvard and the University of Berlin, and who became the guiding spirit behind the establishment of the N.A.A.C.P. He may be best remembered by his 1903 publication *The Souls of Black Folk*, in which he gave a rather critical "after-the-fact assessment" of Booker T. Washington's resolve that black education should be more practical than classical.

It is rather easy to see problems of the past, but DuBois' vision of a problem of the future is most worthy of consideration. In 1908 he published *The Negro American Family* in which he stated "... the most difficult stage in the struggle for racial justice in America would be reached when it became clear that fundamental inequities persist in spite of litigation, legislation, and direct confrontation." DuBois' future is now the present. To quote Moynihan's *Family and Nation*, " ... Problems persist despite the progress generated by the Brown decision of 1954, despite the civil rights laws of 1964 and 1965, despite the non-violent civil disobedience movement directed by Martin Luther King, Jr., and despite the sporadic urban riots of the 1960s."

The Future

Any positive future movement in the region must meet the challenges of the past and be addressed in the context of the historical basis on which the poverty and deprivation of the underclass was established.

Education must become a new thrust in philosophy, actuality and perception. The new South or the revitalization of the Delta region must be designed to reverse the mind set 180 degrees. Strategies for achieving this reversal include indoctrinating the very young and further educating older people of the region, both black and white. The role of education in improving quality of life must be recognized, for only through education of the masses will economic development become a reality, the social fiber of the community be enriched, and problems of the Delta region be resolved.

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References

DuBois, W.E.B. *The Negro American Family.* Connecticut: Negro Universities Press, 1969. Originally published 1908 by Atlanta University Press.

DuBois, W.E.B. *The Souls of Black Folk.* New York: Dodd, Mead and Company, 1961. Originally published 1903, Atlanta GA.

Ezell, J.S. *The South Since 1865.* New York: The Macmillan Company, 1963.

Moynihan, D.P. *Family and Nation.* New York: Harcourt, Brace and Jovanovich, 1986.

Simkins, F.B. *A History of the South.* New York: Alfred A. Knopf, 1961.

Economic Development Through Value-Added

Joe McGilberry Sr.

There are numerous definitions of varying lengths for economic development, but for our purposes a simple concise definition will be used, that being the creation of wealth. In a local or regional economy the creation of wealth should not be confused with the transfer of wealth. If we are transferring dollars within a local market for goods or services, the dollars indeed turn over and wealth is transferred, but not created. To create wealth we must exchange local or regional goods and services for dollars from outside the region.

Likewise, there have been many discussions of the concepts related to value-added. We will describe value-added as any activity which increases the value of raw materials. Such activity would include processing or manufacturing, packaging, distribution, marketing, etc. When evaluating value-added opportunities, we should not limit our thinking and consideration to only raw materials--natural resources, raw goods or materials--indigenous to the region. We need to consider every possible value-added alternative that will enhance the development picture of a local or regional economy. There are many innovative and creative people all around us with value-added ideas. We need to be a support system which helps them mold and structure their ideas into reality.

Therefore, economic development through value-added would involve increasing the value of raw materials by some activity or series of activities (processing and manufacturing) and then successfully exchanging this value-added product through marketing and distribution channels for dollars from outside the region. This sounds simple, but for it to occur several things must happen. These can best be described within the framework of a concept called entrepreneurial success.

There are at least three necessary ingredients for entrepreneurial success: 1) marketable ideas, including the product, market strategy and business plan; 2) management skills, the ability to manage and control the operation; and 3) capital, access to equity capital, venture capital, working capital, etc. For economic development to occur an environment must be established that supports, encourages and facilitates entrepreneurial success.

This environment needs to provide business and technical support in developing and refining the product and in structuring the business plan and marketing strategy. Technical and educational assistance is also necessary to develop and improve the needed management skills for the entrepreneur or the management of the operation. Finally, capital formation that is accessible to the entrepreneur must occur.

THE CONCEPT

An example of a program effort which focuses on economic development within the agribusiness sector through value-added is the Food and Fiber Center at Mississippi State University. The Food and Fiber Center was established as a part of the Mississippi Cooperative Extension Service in 1974. The goal and mission of the Food and Fiber Center is to increase value-added to the state's economy through expanded and improved processing and marketing of Mississippi's agricultural, marine, aquaculture and forest products.

The significance of the activities of the Food and Fiber Center and its mission is reflected in a January 1984 report to Congress from the Secretary of Agriculture on the *Needs Assessment for the Food and Agricultural Sciences.* In this report the Secretary stated that:

> "The importance of processing, marketing, and distribution is evidenced by the fact that two-thirds of the retail cost of food is associated with this segment. It is expected that roughly three-fourths of the retail value of food, fiber, and forestry products will be represented by these activities by the beginning of the 21st century. The beyond-the-farm-gate sector of the U.S. economy will become increasingly critical to national employment, the inflation rate, and the balance of payments. As we look to the year 2000 and beyond there are three major areas of concern:
>
> 1. increasing transportation costs
> 2. processing and packaging efficiencies
> 3. storage and handling issues."

Along with market development and improving the efficiencies of resource utilization, these areas are the primary focus of the Food and Fiber Center.

The programs of the Center focus on providing leadership to decision makers in firms and industries regarding new and expanded processing plans and markets for Mississippi food, fiber and forest products, along with identifying resources and raw materials in the state that could be used to stimulate economic development in agribusiness industries. The Center assists agribusiness industries in the state by providing educational and developmental services and technical support through a multi-disciplinary task force. The areas of specialization include management, business analysis, industrial engineering, economics, food technology, wood and wood products processing, marketing and distribution. Typical services offered are listed below:

- Perform economic analysis of production processes and marketing distribution strategies for existing and new products.
- Identify new market opportunities and assist with domestic and foreign market development.
- Educate managers in the planning and control of business operations, including quality control programs, disposal of liquid and solid waste from processing, inventory controls and management information systems.
- Perform feasibility studies for new or expanding Mississippi agribusiness processing firms.
- Assist with new product development in areas of formulation, processing procedures, taste testing, packaging, labeling and market potential.
- Perform management audits for agribusinesses.
- Conduct in-plant analysis to improve productivity and operating efficiency and develop facility and process line layouts.
- Evaluate economic justification of capital expenditures.
- Provide information about local, state and federal regulations governing food and wood products processing.
- Review research and technological development for potential application to Mississippi agribusiness processing firms.
- Evaluate economic trends for Mississippi agribusiness processors.

THE OPPORTUNITY

For the crop year 1988, farm value for Mississippi agricultural and forestry commodity production was $3.5 billion with an estimated consumer retail value of $18.1 billion, resulting in an added value potential of approximately $14.6 billion. Estimates are that 55 percent of these agricultural and forestry products were exported to other states or countries for processing, resulting in millions of value-added dollars being lost to the state. For those products that were processed or to which value was added locally, the economic impact of this activity was significant.

Table 1 illustrates the impact of value-added processing. The farm value of $3.5 billion when applying total linkage multipliers shows an economic impact of $13.4 billion, a four-fold increase. A closer look at Table 1 shows that for commodities which had value added to them through processing and marketing, higher linkage multipliers were identified. Those commodities that were exported for processing had relatively low linkage multipliers or economic impact on the area or state.

To realize the full opportunities in value-added processing and marketing within a state or region, we must continue to develop an industrial base for processing or converting agricultural and forestry commodities into consumer-ready products and distributing these products into the marketplace.

THE PLAN

An agribusiness development action plan has been formulated by the Food and Fiber Center that provides direction for achieving the value-added opportunities which can be developed within the state. This plan focuses on: 1) agribusiness planning and development, 2) product development, 3) food and fiber processing and 4) food and fiber marketing in identifying opportunities and objectives for continued agribusiness development in Mississippi.

Agribusiness Planning and Development

The economy of Mississippi is linked to the agricultural and natural resources in the state. In a study by the Mississippi Research and Development Center, it was stated that, "Food processing, lumber, and mining, which are strongly connected to the state's agricultural resources and natural resources, have comparative advantages in the state's economic development strategies." The opportunity exists for continued growth and expansion in agribusiness planning and development, which focuses on the *value-added* potential of the state's agricultural and natural resources. The catfish, poultry and furniture industries are examples of agribusiness industries that have had exceptional growth and impact on Mississippi's economy and are taking advantage of value-added potential.

The objectives of this effort are to:

1. Provide support information and economic and strategic evaluation in the planning and development of new or expanded agribusiness ventures.
2. Educate agribusiness managers concerning the application of new technology in their industry.
3. Encourage cooperative efforts in the public and private sectors to expand the agribusiness base in Mississippi.

Product Development

Value-added potential from Mississippi agricultural commodities is not being fully realized in certain food and fiber products. An opportunity exists to increase the value added to agricultural food products by developing a larger number of consumer-ready foods. Retail food industry statistics indicate that more than 10,000 new products or line extensions were introduced in 1988. The trends in food consumption provide fertile grounds for new product development and opportunities abound in all areas of agribusiness, especially in catfish, poultry, red meat, underutilized marine species, feed grains and horticultural crops. Mississippi food and fiber processing and marketing firms need to explore these opportunities for developing new products.

The objectives of this effort are to:

- Provide clientele with assistance in developing new product ideas and formulations, product improvements, cost analysis of product ingredients, market analysis and distribution channels for new and improved products.
- Teach food processors how to develop new and improved products from agricultural commodities.
- Help processors and marketers to understand the economic benefits of developing and marketing new products.
- Provide management of new ventures, home growth industries and existing operations with financial and management control information for new product development.
- Better inform financial, government and business leaders about the food processing industry and its economic significance to the state.

Food and Fiber Processing

Food and fiber processing may hold the key to Mississippi's economy. Value-added potential to agricultural commodities produced in Mississippi in 1988 was estimated at $14.6 billion. The food processing industry and the rapidly expanding furniture and forest products industry in Mississippi have tremendous potential for improving their value-added position. Many of these food and fiber processors have organizational structures that do not effectively use and develop their manpower. They often fail to perform comprehensive economic and financial analyses when evaluating new equipment, process alternatives, and building and/or expanding facilities.

The objectives of this effort are to:

1. Educate the state's new and existing food and fiber processors in the application of technologies to improve productivity and increase further processing opportunities.
2. Train agribusiness managers in organizational analysis and manpower planning, development and training.
3. Assess and evaluate economic processing costs, and operating margins so that these food and fiber processors can maintain a competitive status.
4. Assist in improving quality control and assurance programs in agribusiness industries.

Food and Fiber Marketing

In 1988, value of farm production in Mississippi for all food and fiber commodities was estimated at $3.5 billion. However, the estimated retail value for these commodities was $18.1 billion. As products are further processed, the role of marketing becomes greater. Better marketing channels are needed to move the products to end users. Innovative marketing techniques are needed to expand existing markets and to identify new markets. A critical evaluation of marketing margins is needed if Mississippi processors/manufacturers are to remain competitive in the market place.

The objectives of this effort are to:

1. Explore and assess new and potential markets for existing and proposed products.
2. Assist processors/manufacturers in establishing overall marketing strategies.
3. Evaluate direct, cooperative and export marketing opportunities for food and fiber processors/manufacturers.
4. Analyze economic advantages/disadvantages of various marketing and distribution systems for food and fiber processors/manufacturers.

CONCLUSION

The opportunity for economic development through value-added is real and the potential is great. We must remember that economic development is not an event such as a meeting or a ribbon cutting, but rather a process of supporting, developing, encouraging and facilitating the entrepreneur in achieving success. The economic development benefits to the community can be significant whether the entrepreneur is local, national or international.

Joe McGilberry Sr. is manager of the Food and Fiber Center with the Mississippi Cooperative Extension Service. He is responsible for coordinating a 10-person interdisciplinary team of subject matter specialists and support staff whose objective is to increase "added value" to the state's economy through expanded and improved processing and marketing of Mississippi agricultural forestry, marine and aquacultural products. He previously taught at the university level and worked in private industry. He received his Ph.D. at Texas A&M University.

Table 1. 1988 Farm Market Value, Linkage Multipliers for Each Crop, and Resulting Economic Impact, Mississippi

	Farm Marketing[1]	Total Linkage Multipliers[2]	Total Economic Impact
	(million dollars)		(million dollars)
Soybeans	379	2.62	992.98
Cotton	721	2.65	1,910.65
Forestry	624	2.84	1,772.16
Poultry and Eggs	562	6.29	3,534.98
Meat Animals (feeders)	297	3.30	980.10
Feed Crops	141	2.79	393.39
Dairy (milk)	121	6.25	756.25
Food Grains	236	2.79	658.44
Horticulture Crops	82	2.45	200.90
Catfish	301	7.73	2,326.73
TOTAL	3,464		13,526.58

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[1] Mississippi Cooperative Extension Service Agricultural Economics.

[2] The Mississippi Input-Output Model and Its Multipliers, Mississippi Business, Vol. 47 No. 1, January 1988.

Value-Added Businesses in Agricultural Economic Development

Forrest E. Stegelin

Economic Development

As the communities, counties and states in the Lower Mississippi Delta enter the 1990s with an eye toward the 21st century, a quick glance in retrospect at the 1980s confirm suspicions on the South's (and the Delta's) rural economy. These concerns were that the traditional mainstays of the rural economy along the banks of the "mighty Mississippi" were eroding. Agriculture and manufacturing were rapidly declining.

The 1980s left its mark on agriculture in the Delta counties, and throughout the United States. Rising real interest rates, declining commodity prices, curtailed exports, a reluctance by farmers to take on additional debt, falling land values, reduced planted cropland in response to the farm bill legislation, and a binge of capital spending in the late 1970s slowed agricultural economic expansion and development throughout the region. This especially occurred in areas where small scale agriculture is the norm rather than the exception; although commercial-size farms with gross sales exceeding $40,000 annually, were not idle bystanders.

Reports from *The Kentucky Farm Change* survey, a six-year repetitive study by the University of Kentucky's departments of agricultural economics and sociology, of Kentucky farmers and agriculture by region of the state, offers the following insights on western Kentucky agriculture (whose counties correspond to those in the Lower Mississippi Delta):

- About 12 percent of those farming in the 1986 survey were no longer farming in 1988.
- Of those farm operators or managers who said they were no longer farming, nearly 61 percent said the farm owner had retired.
- Those no longer farming often gave more than one reason for quitting. Among the most common reasons: earn more money off the farm (85.7 percent), not enough income, unstable income and increase standard of living (69 percent for each category).
- Bankruptcy or being forced out of farming by the bank was a factor for 16 percent of respondents.
- The percentage of farms where both the operator and spouse were employed off-farm increased from more than 28 percent in 1986 to about 33 percent in 1988.
- Farms where neither the operator nor the spouse had off-farm employment decreased from just over 37 percent to about 35 percent.

As for manufacturing in the South, especially the Delta region, the Sun Belt is tightening its economic belt. The in-migration of industry and branch plants has slowed to a trickle. For some locales, the in-migration never occurred and the reality has set in that such economic hope may have been a dream. Out-migration of residents has also slowed, although most of the potentially mobile residents (education, skills, opportunities, desire) have already left.

So a resounding question becomes how can rural Delta residents best build upon the resources at hand and begin to reconstruct stronger local and regional agricultural economies? At various times and by various individuals, five fundamental rural economic development strategies have been championed:

1. Infrastructure development, including utilities, transportation networks and human resource services.
2. Agribusiness, including structural shifts in production agriculture.
3. Industrial recruitment, including branch plants and research and development facilities.
4. Natural resource extraction and processing, including water, coal, oil and natural gas, and gravel and sand.
5. Tourism and recreation, including theme or amusement parks and family activity centers addressing the locale's heritage or topography/ geography.

For every success story, there seems to be at least one horror story, but it is still within these five development strategies that an economy can be built or rebuilt stronger than the predecessors.

There are three keys recognized to unlocking and opening the door to potential economic and human capital development. These keys are touted as the "three Es of development": empowerment, education and entrepreneurship.

Empowerment is the willingness and ability of people to take charge more fully in the development process. Rural residents need to exercise their choices and voices in the economic development pursuit. Not only is it their human capital that will be enhanced, but also their human capital that will bear the burden of any mistakes in the planning, implementation or working phases of economic development. Consequently, the voices of rural residents should be heard throughout the process--not as advocates, but as inputs.

Education is more than the provision of basic skills and the preparation of better job applicants. Education influences societal attitudes toward rural development. Education can perpetuate the apparent trends of passivity, docility, low self-esteem, low aspirations and fatalism whereby rural residents fester in their own self-pity; or education can develop a new repertoire of traits accentuating dynamic functions and activities that will positively re-think the current counterproductive priorities that have become accepted as normal. Education is not an output of society but, together with family, attitudes and community, is an input into the antidote for poverty--economic and human capital development.

Entrepreneurship encompasses a wide range of examples: self-employed individuals, cottage businesses and industries, worker-owned enterprises, cooperatives, community development corporations, owner-operated businesses and farm firms. Within the concept of entrepreneurship arises a myriad of value-added potentials, of which an overview is presented later in this article. This third key of development embodies the other two "Es" because successful entrepreneurship requires know-how, rather than guess-how.

Some communities that appear to offer relatively few good job opportunities usually have a variety of good economic opportunities. Unfortunately, history has seen many of the prime economic opportunities in an area gobbled up by outside investors. Growth from within must, however, be coupled with appropriate financial and technical assistance from outside the rural communities. Even then, the assistance, incentives and service only come when the labor climate and the business climate offer inducements or opportunities that at least hint of economic development progressing beyond the discussing, cussing and planning phases.

The two issues, labor climate and business climate, may not share the same evaluation or indices. For instance, virtually the entire Lower Mississippi Delta states are rated in the worst category for the labor climate (based on analysis of 33 indicators measuring income, job rights, health and safety, equal employment opportunities, job loss benefits, and so forth by the Southern Labor Institute).

Using 22 somewhat similar indicators (which give higher scores for low wages, low taxes and low worker compensation) to evaluate the business climate, Grant Thornton Consultants categorize these states in stark contrast to the labor climate score of "worst": Mississippi--best; Tennessee, Arkansas and Missouri--better than average; Kentucky and Illinois--worse than average; and only Louisiana--worst.

Development tools are usually perceived as either financial assistance, tax incentives or special services. Often overlooked, or just assumed, is a broadening of attitudes that rural community economic development programs and strategies, including entrepreneurship, can have a significant impact on the residents. Civic leaders, local government officials and the general public need to grasp and feel part of the opportunity search and development process in a positive atmosphere. It is too easy to sit back and wait for the direct assistance from federal, state, county or community government. The gravity of the problems facing rural economic development can be eased by direct assistance, but not eliminated.

Examples of financial assistance provided by some governments for industrial development that may warrant investigation include: industrial development authority, development credit corporation, revenue bond financing, general obligation bond financing, loans for building construction or equipment and machinery, loan guarantees for building construction or equipment and machinery, financing aid for existing plant expansion, matching funds for industrial financing programs, or incentives for establishing plants in areas of high unemployment.

A list of tax incentive programs offered at state and/or local levels include: corporate or personal income tax exemption, excise tax exemption, tax exemption or moratorium on land or capital improvements or equipment and machinery, inventory tax exemption on goods in transit (freeport), tax exemption on manufacturers inventories, sales/use tax exemption on new equipment, tax exemption on raw materials used in manufacturing, tax incentives for creation of jobs or industrial investment, tax credits for use of specified state agricultural or natural resource products, tax stabilization agreements for specified industries, tax exemption to encourage research and development, or accelerated depreciation of equipment.

Special services offered as inducements to economic development can include: financed speculative building, free land, industrial park sites, master plans, recreational projects, public-works projects, research and development, export marketing programs or assistance, feasibility studies, employee training, or advisory council.

These development tools are effective for enticing industrial economic development. Unfortunately, agricultural economic development generally does not fit well with industrial development. Instead of a macroeconomic approach (industry level), a microeconomic approach (firm level) is more easily developed and adopted by the agriculturalists.

Agricultural Economic Development

When it comes to agricultural economic development, the following Merrill Lynch version of how agriculture should be restructured (extracted from a 1986 Food & Fiber Letter) is neither applicable nor acceptable for agriculture in the Lower Mississippi Delta. In fact, part of the dilemma facing agriculture arose because of such a revamping strategy:

> "...a Merrill Lynch 'Confidential Private Placement Brochure' distributed to selected Merrill Lynch investors proposes raising the money to acquire prime land at currently (1986) depressed prices, grow high-value crops, add processing facilities and sign supply contracts with food companies. The organizers say they hope to get a 20-25% return to investors annually.... It contends most farmers have neither the finances nor the experience to switch from producing grain and soybeans to vegetables and other high-value crops and that farmers cannot realize economies of scale through integrated farming. And most farms, adds Merrill Lynch, are neither large enough nor sufficiently capitalized to get supply contracts with major food companies...."

In the food and fiber industries, an individual can easily get caught up in the large number syndrome. After all, every 1 percent of the national food processing market represents nearly 50,000 jobs, about $4 billion in earnings and more than $10 billion in economic impact. Of course, this is from a food industry perspective only, not including even the fiber industries or the marketing and distribution channel activities. The opportunities for economic development at the individual, community or county levels are almost infinite in support of agriculture.

The employment prospects, including self-employed, are likewise phenomenal: granted only 2 percent of the U.S. populace is employed in production agriculture, but 5 percent of the population generates goods and services to support the farmers, and 18 percent are employed by beyond-the-farm-gate agribusinesses whose jobs are to make the raw farm products useable and commercially available to consumers how, where and when they want the items.

Value-Added Business Development

With the farm crisis of the 1980s, as mentioned initially, has come renewed interest and attention to the potential economic benefits derived from value-added businesses and industries supporting production agriculture and natural resource products. Value-added is not to be confused with nor construed to mean high-value, as in the Merrill Lynch remarks.

Incorporating new technologies and industries that add value to agricultural and natural resource products provides a strategy for state, regional and rural community economic development because of the need for research (performed by the private and public sectors), new marketing strategies, an attitude of entrepreneurship and teamwork, and innovative financial packaging during not only setup phases but operational support as well. Value-added businesses have also been among the fastest growing export industries in international markets, although the export terminology for such value-added products is high-value products. Not all of us, however, can participate in the international arena.

Political pressures as well as economic necessity have brought renewed attention by federal and state leaders, entrepreneurs, agribusiness firms, community planners, economic development agencies and land grant universities to the potential for value-added businesses related to agriculture and, if available and usable, natural resources. Developing value-added industries helps stimulate demand for agricultural and raw materials, thereby strengthening the market for farm-related products.

The USDA defines a value-added product as "any product that is at least one processing step removed from the basic agricultural commodity." While this may serve as an acceptable definition for some products, it fails to reflect the multi-faceted aspects of many value-added opportunities. It is this definition that has perpetuated the concept that value-added has to be interpreted in a very narrow context almost synonymous with food processing.

Granted, food processing is the principally recognized and documented value-added sector of agriculture, as referenced in the worth and employment statistics earlier. The potential for applications far exceed the bounds of food products, however, to include fiber products and, for example, forestry and waste product utilization. When the constraints are lifted, initiative and imagination know no bounds so that individuals in cottage businesses as well as community-based firms and regionally-supported activities can nestle into the value-added concept and be economically rewarded.

Definition of Value-Added

The definition of value-added that appears more appropriate for the Lower Mississippi Delta region is ***any activity which increases, by means of processing or any other means, the value of raw materials indigenous to the local area*** (source: *Attracting Value-Added Businesses: Agricultural Enterprise Development*, U.S. Department of Commerce Council of State Governments). This definition is based on the premise that a value-added industry expands the demand for products that already are, or could be, produced in the area. The activity may or may not change the form of the raw material, but it must increase its value.

Given this definition, value-added businesses create value, or economic utility, in one of four ways: form, time, place and information or possession. For instance, a hog on a feeding floor in Iowa in February is a far different product from a ham sandwich at a Cincinnati Bengals' football game in Cincinnati's Riverfront Stadium. The changes that transform the live hog into the desired consumer product are referred to as adding utility or value.

All marketing agencies and firms earn their livelihood from contributing utility or value to products. The hog farmer adds form utility and value by raising the pig to market weight. A live hog in Riverfront Stadium, however, has little value to the hungry football fan. So meat packers add more form value by breaking down the carcass into various cuts and producing canned hams, and the concessionaire adds still more value by making sandwiches. Inventory holders, such as meat wholesalers, add time utility or value to the product by storing the hams, ensuring sufficient quantities when needed. Transportation firms help to add place value or utility by moving the hams from Iowa to Cincinnati, Ohio.

Form value varies from that which does not change the basic nature of the raw product (a pig to a hog), to that which transforms the raw material into an entirely different form (canola to a food oil). Superimposed on this classification of value-added is another distinction which is even more important from the perspective of policy and decision makers. Value-added activities are either traditional (or at least widely employed) or they are innovative.

Examples of traditional value-added businesses include: grain elevators, livestock slaughtering or rendering plants, vegetable packing sheds, barge or trucking firms and roadside produce markets. More innovative value-added activities include: timber and lumber mill products; recreation (bed and breakfast, tours, hunting, fishing, dude ranch, experiential farming); gravel/sand/coal pit reclamation for recreation; cave production of mushrooms; cottage crafts;

wool or cotton processing for yarn/crafts/tailored clothing; specialty food products germane to area or heritage; agribusiness retail and management information centers; or custom services, including farm sitting and scouting.

The location of traditional value-added activities (vegetable packinghouse, for example) is determined by comparative advantages. Such industries gravitate over time to those areas where, because of proximity to raw product or materials, labor, energy, markets or infrastructure, profits are maximized. Conscious efforts to develop such an industry are often unsuccessful because a local area may not have sufficient economic advantage in its production. When efforts are successful, they tend to be at the expense of some other nearby region and do not represent a gain to the broader constituency.

In contrast, innovative value-added activities represent net gains to the area without inflicting offsetting losses elsewhere. They generally have relatively few competitors (compared with the demand for the goods and services) and will succeed as long as the value-added activities are managed well. These innovative ventures depend on entrepreneurship and some risk taking, and are often relatively high risk as rapid growth enterprises frequently requiring non-traditional sources of capital investment and human capital investment.

This definition of value-added includes industries in which new knowledge is applied to waste products in order to generate otherwise traditional agricultural enterprises. Shiitake mushrooms, for instance, are produced by injecting logs with appropriate spores utilizing, in this sense, a low-valued raw material (a decaying scrub log) to grow new food products. Reclaiming strip-mined land so that new food crops can be grown adds substantial value to the wasted potential of the strip-mined land. Utilization of waste heat from thermal caves by greenhouses is yet another example. While these forms of adding value to the raw material are usually not included in definitions of value-added, they point to important strategies which enhance the economic potential of rural areas.

Innovative value-added activities require the application of some form of technology or skills to agricultural and natural resources. These include not only the food producing sector, but other commercial agricultural crops such as tobacco, canola and fiber crops; raw materials like mineral and forest products; and animal products such as wool, hides, by-products and fisheries (trout, catfish, freshwater crustaceans).

Focusing on a broader range of materials enable development planners to identify a diversity of approaches to economic development. It is important to recognize that innovative, value-added industries incorporate knowledge through new technologies and often require new market information and university assistance (research, resident instruction and cooperative extension) to tap into new markets in both the domestic and international context.

Although the material has seemingly addressed value-added industry, value-added also applies to cottage businesses or the extension of the farmhouse. For instance, crafts utilize raw agricultural commodities: grape vines or pine bows for wreaths; fruits for jams, jellies, preserves; vegetables for condiments; produce for pies and turnovers; baby animals for a petting zoo; milking parlor for educational tours; goat hair and sheep's wool for yarn or clothing; and numerous other examples are possible.

The key is to look around and listen. The possibilities are not limited to single entrepreneurship industries facing those problems. Farm family support is enhanced with such a value-added cottage business, as on-farm employment can be maintained in a nontraditional sense. In the national scheme, such a value-added activity may be insignificant--but what it represents to the local economy and grassroots economic development is big money and jobs.

Summary

Value-added activities produce existing products or new and innovative products because the value-added activities increase the value of raw materials indigenous to an area. These products bring benefits to the area in which they are located, but it is the innovative products which offer the most potential in terms of jobs, multiplier effects, and long term growth potential to the mutual benefit of producers, consumers and laborers.

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The Role of Aquaculture in the Economic Development of the Mississippi Delta Region

Larry W. Joiner

The farm-raised catfish industry centered in the Delta region of Mississippi is a uniquely localized industry. Unlike all the other agricultural enterprises in the area (cotton, rice, soybeans), the crop is grown, processed and marketed by companies located in a 50 mile radius of each other. These companies take the live fish grown in local man-made ponds, work their processing magic and ship microwaveable, ready-to-eat entrees to countless consumers all over the United States and the world.

Economically speaking, farm-raised catfish is the largest aquaculture industry in the U.S., with an annual production in 1989 of 342 million live pounds. During the 1980s, catfish production grew a compounded 25 percent rate per year. Catfish is the third most popular fin fish eaten in the U.S., ranking behind cod and flounder. Catfish will overtake flounder this year, and may exceed cod in this decade due to the diminishing supplies of these wild species.

The Delta region in Mississippi provides more than 75 percent of the industry's fish production, and more than 85 percent of the industry's processing capacity. There are 319 catfish farming operations in Mississippi, producing an estimated 250 million pounds per year.

In Mississippi, the catfish industry has a value of $332 million, ranking it in fourth place in all agricultural income ahead of soybeans, livestock, rice and wheat. Total industry employment is estimated to be 6,000, with an annual payroll of $80 million. With an economic multiplier of 7.7, the financial impact is calculated at $2 billion, second only to poultry.

Farm-raised catfish along with poultry, may well be the food of the '90s. It is nutritious, low in calories and cholesterol, and versatile to prepare, which makes it perfect for today's busy consumers. The advantages of freshness, consistent supply and price stability make it a favorite of food buyers. With continued nurturing, this relatively new industry has a continued bright future, and as it grows, so will employment opportunities in the Mississippi Delta region. Automation has not, and will not for the foreseeable future, be able to keep up with the industry's growth rate. New employees drawn from the region will be necessary. As the industry matures, pay scales and fringes will improve appropriately.

In 10 short years, the farm-raised catfish industry has made a significant financial impact in the Lower Mississippi Delta region. I believe our greatest growth is yet to come!

Larry W. Joiner is executive vice president for Delta Pride Catfish Inc., an industry leader in farm-raised catfish, with annual sales this fiscal year projected to be $170 million. In his position he is responsible for all sales, marketing, customer service, research and new product development.

Economic Forces Influencing Value-Added Food Industries in the South[1]

Ralph D. Christy

In recent years, much attention has been given to the questions of value-added activities of agricultural industries for economic development purposes. These issues are more pronounced at the state level, where the discussion focuses on questions of employment impacts and new income sources for rural communities. The value-added food and fiber industries, beyond the strategic links they serve between agricultural production and the consumer, continue to comprise a major sector of the U.S. economy.

Value-added products from agriculture have a retail value of more than $700 billion annually and engage approximately 20 percent of the U.S. labor force (ESCOP). Post-farm gate activities account for 75 percent of the retail price of food and fiber products, and only 5 percent of the value of foods purchased by consumers is unprocessed. This paper seeks to inform researchers, industry participants and public policy makers of some contemporary forces influencing value-added food industries in the South and by doing so, the economic performances of the U.S. food industry.

The Driving Forces of Change in Value-Added Markets

Long-run change in the food manufacturing sector is influenced by three major forces: economic, technological and institutional. The economic forces influencing food manufacturing include domestic demand, market structure and organization, and international factors. Technological change brings forth new products and processes, thereby altering the input mix and comparative regional costs advantages. Institutional forces include public policies at the national, sectorial and state level.

Although these three forces are logically separable, a great deal of interaction exists among them. For example, international forces have economic impacts which are very much a part of the institutional or policy environment from which they emerge. Finally, one factor important to all economic and social change is the human resource. We find scant treatment in the theory or practice concerning the influence of human resources as a force in changing the food manufacturing sector. Examining the forces influencing the food manufacturing sector provides some context for understanding how this sector may grow in the future.

Demand for processed foods is influenced by several factors which includes income, prices and population. Generally as income rises, the share of a family's income spent for food falls. The relationship does not hold for all food items, as some highly convenient foods tend to be more responsive to income change. Empirical evidence suggests that the price elasticity for most food is inelastic. Processed foods appear to be more inelastic than fresh fruits and vegetables. The demand for food increases almost in direct proportion to the rate of population growth.

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[1] For a more detailed treatment see Ralph D. Christy and John M. Connor, "Economic Forces Influencing Value-Added Food Industries: Implications for Southern Agriculture," *Southern Journal of Agricultural Economics*, Vol. 21 No. 1, July 1989.

In recent years, however, slow growth in population rates resulted in lower growth in the total demand for food in the U.S. Moreover, the demographic realities will play a larger role on food consumption than aggregate population. Recent demographic considerations include: household size, age distribution, women's participation in labor force, ethnic composition, urbanization and education.

The food manufacturing industries have experienced major structural and organizational changes during the last two decades. Some segments of the food processing industry have grown more concentrated while other segments have become more competitive. The major factor contributing to imperfectly competitive value-added food markets are: product differentiation, firm differentiation and the new wave of food firm mergers.

By most standards, adoption of new preservation technologies within the food industry has been relatively slow. An exception is the rapid pattern of labor productivity growth (Connor). Perhaps this slow rate of technical innovation is tied to an early market structure (pre World War II) that essentially consisted of decentralized competitive small firms. Many segments of the food manufacturing sector have become more concentrated, which has encouraged technological adoption in two ways:

1. By increasing rivalry in new product development, a strategy that can maintain or increase market shares.
2. By broadening the financial base of firms to facilitate adopting new production techniques either through greater retained earnings or enhanced ability to borrow (McCorkle).

Over the past few decades, world food markets have experienced a greater degree of interdependence as the volume of food traded internationally has steadily risen. From the U.S. perspective, a close examination of agricultural products traded will reveal that a significant portion consists of raw commodities. A recent Experiment Station Committee on Organization and Policy (ESCOP) study reveals that the U.S. has a disproportionately low share of the world's total value of agricultural products. More work is needed to expand the processed share of U.S. agricultural products on world markets.

The Role of Public Policy

Public policies affect the food manufacturing industry at different levels: macro policy, sector policies, and state and local policies.

Macro policy, fiscal and monetary, influences the food processing sector in many significant ways. Macro policy bears directly on interest rates, thus on the availability of capital for industry. National policies affect the value of the dollar, levels of taxation, wage rates and the employment rate. All of these factors directly influence the cost of products and output levels of food manufacturers, as well as affecting the purchasing power of the consumer. Regulatory policies at the national level are related to the economic performance of food manufacturers, with laws directed toward safety, antitrust and public health also providing an impact.

Agricultural policies are directed toward maintaining income for farmers via a number of policy instruments ranging from direct price intervention to supply control. Historically, these policies have not had as an objective the maintenance of a structurally competitive food system. Such policies have indirectly maintained a processing sector, assuming that agricultural sectoral policies are necessary for the maintenance of raw producers. For example, sugar policies, while maintaining the existence of sugar farmers, also help keep sugar mills operating.

Although macro and agriculture sector policies clearly influence food manufacturers, so does a growing and largely unrecognized policy set--state government. Food manufacturing firms respond to a whole set of factors influencing their location beyond economic considerations, such as source of raw product, transportation costs, bulkiness of raw products and perishability of processed products. They are influenced by local taxes, educational policies, capital market (regulations), and environmental policy, which are all enacted at the state level. In recent years, several states have attempted to enhance their competitive position in food processing.

Regional Differences in Value-Added Food Industries

The last three decades have witnessed tremendous shifts in the relative growth patterns of the U.S. food manufacturing industries. To help chart these changes, three indexes of economic performance were used in formulating the following five implications:

- The number of U.S. food processing plants has fallen dramatically in recent decades. The South had lower closing rates than did the U.S. in the 1960s, but since 1972 the South's experience has closely paralleled the national trend.
- Employment losses in the U.S. food processing industries were small but steady: roughly 5 percent in the 1960s, 1970s and early 1980s. The South has one-third of the U.S. food processing employment. Arkansas and Mississippi have benefitted from rapid expansion of poultry dressing and processing industries. Louisiana experienced substantial job losses in food processing.
- Real production (value of shipments corrected for inflation) of U.S. food processing increased by 111 percent from 1963 to 1985.
- Labor productivity has increased handsomely in U.S. food processing since 1963, averaging around 4 percent per year.
- All Southern states are projected to have positive growth rates, and 13 Southern states have predicted growth of food processing greater than the national average.

Recommendations

Public policy directed toward enhancing the economic performance of valued-added industries in the South, including the Delta region, should:

- Expand publicly supported research funds targeted to post-harvest technology development; evaluate the system of markets and related institutions which organize economic activity; and evaluate the relationship between current (and potential) market structure (and policies) and resulting economic performance.
- Suggest new policies directed toward the maintenance of a competitive structure to stimulate desired market performance.
- Invest in human capital programs for residents in the Lower Mississippi Delta, as much of the value-added industries are *human capital intensive* vs. *labor intensive*. Entrepreneurial development programs should be given high priority.

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References

Connor, J. M. *Food Processing: An Industrial Powerhouse in Transition*. Lexington, MA: Lexington Books, 1988.

McCorkle, C. 0. Jr. "U.S. Food Manufacturing Industries: An Overview" in *Economics of Food Processing in the United States*. Ed. Chester O. McCorkle Jr. San Diego, CA: Academic Press Inc., 1988.

The Experiment Station Committee on Organization and Policy (ESCOP). *Enhanced Research Agenda for Value-Added Food and Non-Food Uses of Agricultural Products*. 88-2, Agricultural Communication Service, Purdue University, West Lafayette, IN.

Roundtable Discussion

Value-Added

Joseph W. Morris, Presiding

I. The roundtable discussion began by identifying constraints and venturing recommendations for alleviating these constraints.

Constraints:

- Commodity markets are not sufficiently identified and a means for their development is equally lacking.
- Attitudes sometimes alluded to as a "mindset," stand as a serious hinderance to economic progress. The notion that "bigger is better" needs to be altered, and the tradition of commodity production as king must be reconceptualized to allow other forms of enterprise to gain footing.
- There is an underdevelopment of human resources in the region, including a lack of leadership, education and entrepreneurship, as well as management, labor and marketing skills.
- Venture capital is interrelated with attitudes and unless the controllers of funds are willing to invest and take risks, the goals that we have developed will not be realized. We badly need partnerships.

Recommendations:

- Tax advantages to those offering venture capital seems an excellent plan and this plan was plentifully recommended.
- Corporations, banks, etc. must be willing to form partnerships.
- Federal agencies must be willing to institute a money fund to be used in establishing experimental small business operations, as well as lending money to individuals and partnership groups to develop small businesses.

II. Recommendations were also made to change existing federal and state policies.

Federal and State Policy Recommendations:

- The Small Business Administration should "ease-up" on credit and provide more assistance.
- The process for obtaining patents should be streamlined and the cost made less expensive.
- State and regional banks should be put into operation for venture capital support.

Alternative Agricultural Enterprises in Rural, Social and Economic Development

Luther Waters Jr.

The concept of farmers and the agribusiness sector shifting to alternative enterprises seems simple on the surface, but it is in fact, a profoundly complex, emotionally stressing, difficult and time consuming process. This paper will address some of the more important aspects of this process and hopefully stimulate ideas on how to assist the effort.

Education

The level of education and the thinking/reasoning capabilities of all those involved in agricultural change is "far-and-away" the most important ingredient for success. To say that an enterprise is new and different is to imply several important things:

1. There may be relatively little information available, so those involved must be able to take what is known and develop feasible plans. This includes all aspects of change--from genotype selection and enterprise production to marketing.
2. There is probably little or no business infrastructure in existence to deal with the new enterprise. One must therefore be developed, requiring an intense imagination at all levels of the system.
3. Resources specific to a new enterprise may not be available because there is not previous demand for those resources. Innovative skills will be needed to ensure their availability.
4. Financial institutions will be reluctant to provide funding for enterprises that have the characteristics above, plus have a relatively obscure market demand. Great skill will be required to put together a convincing business plan that will secure adequate financial resources.
5. Markets are probably poorly developed or obscure. Creative thinking is required to deal with market development, promotion, advertising and sales.

These and a "laundry list" of similar problems will face those involved in this change. Without a strong fundamental education, individuals will not be able to cope with these problems no matter what role each plays in the system. For example, tractor drivers must be able to comprehend the impact of depth of seeding, depth cultivation, equipment adjustment, etc., on the yield and quality of the crop and the ultimate impact on profit. For a perishable product, the truck driver must understand the importance of temperature adjustment (refrigerated system) in his truck, the delivery time, loading and unloading procedures, etc., on product quality, shelf life and profitability. The manager must understand basic business principles, personnel motivation/organization/education, marketing strategies, etc.

These prerequisite skills will not be present unless there is social priority given to fundamental education from kindergarten on. Educated people are able to: think, create, reason, organize, manage, plan and cope. Further, and maybe even more importantly, educated people are more: caring, compassionate, patient, understanding, confident and generous. These individual qualities will pay dividends in society far beyond the development of alternative agricultural enterprises, and are the foundation of a progressive society. It is the most important element in adopting new enterprises, technology and change in the rural community.

Financial Resources

No business or development proceeds without adequate, appropriate resources. The most important is finances, *the* resource that makes it possible to acquire all other resources. New ventures are risky because of the problems cited above and below, and there is no guarantee of success; in fact, some failures are a given. Someone must decide to take a risk, and yet who should make this decision?

There are many ways to make an informed investment in a new enterprise or business: cash, equipment, land, technical support, time ("sweat equity") and others. These and more can come from a variety of sources. It is understandable that no individual (or entity) feels comfortable making all the investments above, so some entity must decide to stimulate the investment. Society, through various governmental agencies and institutions, is the most common initiator and an educated society is most likely to do this aggressively. The bottom line is that someone *must* ensure that financial resources are available or new development will not take place.

Alternative Enterprises

In recent years, more people have become interested in new crop and animal alternatives. Most of the enterprises viewed as having possibilities generally fall into the following categories:

1. Vegetables.
2. Fruits.
3. Nursery crops (flowers, bedding plants, etc.).
4. Ornamentals (bittersweet, holly, etc.).
5. Specialized crops with no commodity home (amaranth).
6. Exotic animal, bird and fish species.

Those enterprises that have real opportunities vary not only between regions of the country, but also between individuals within a region. Most areas are actively producing crops in each of the categories above. If a demand exists in your area and you are not producing to satisfy that demand, it is being satisfied from outside the locality. Is that product therefore a profitable alternative for your area? Not necessarily. It must be competitive in quality, supply, consistency and price. Careful feasibility studies are required to determine this fact.

The process needed to compete with another area or to develop a new crop or product is important, but must be approached on a far more personal level. Whether you are a farmer who must deal with a specific situation, or in a public service role faced with individuals who need specific solutions to their problems, remember that what looks like a solution for the area may not be a solution for the individual. In the following discussion I will attempt to deal with alternative enterprises on a personal level.

When considering a new enterprise, it is necessary to recognize that this change will impose some demands on the individual:

1. **Unique Technical Skills:** No matter how long you have been farming, when you shift to a new enterprise, it has its own spectrum of production, handling and distribution requirements. It is necessary to know what those requirements are (soil, nutrition, water, diseases, insects, optimum harvest maturity, handling conditions, etc.) and evaluate those requirements considering your own resources.
2. **Competitive Skills:** The more specialized the potential enterprises, the more intense is the competition between suppliers in the marketplace. This means that the supplier must know much more about the clients, their product demands and competitors than when dealing with less specialized products. The more fierce the competition, the greater is the demand on an individual's competitive instincts. You must want to be better than your competitor almost more than anything else.
3. **Managerial Skills:** Because most alternatives are labor intensive in one aspect or another, it is necessary to have superior managerial skills. Frequently, these increased labor demands need to be satisfied from an untrained labor pool or imported farm workers with the needed skills. In addition to labor, the other inputs require precise timing and application to be effective.
4. **Knowledge of the Market:** In order to work effectively in a specific market, you must know what the clients want, when and how they want it, and what they are willing to pay for it. Then you can begin to assess your competition. It takes time to learn these things and unfortunately most people are not willing to take the time.

Change is not easy, and the kind of change we are dealing with is most often forced by difficult economic times and market conditions. Further, those under financial stress are not in a position to take the risks inherent in changing agricultural operations. Assuming that changes must be made, the following discussion is a process I recommend that has its foundation in personal experience. This may seem like a drawn out process for marketing, but to be successful it is first necessary to have a sound business plan for production and delivery of the product.

Inventory Resources

The first thing that must be done to change an operation is inventory the types of resources you have. This includes not only your assets on the books, but *all* your resources. The education and experience of individuals and the family are assets. The willingness to work is an asset. Access to skilled labor is a resource. These intangibles are just as important as your physical assets of land, buildings, equipment, etc. I've found it very helpful to write things like this on paper to be able to deal with them.

What Do You Like To Do?

This is not a trivial question, but rather quite serious. What do you *really* like to do? What do you want to spend the rest of your life doing? Production agriculture is hard work and as you begin to diversify and work with more specialized crops, the physical, emotional and managerial demands increase. If you don't like what you are doing, the energy necessary to succeed will not be put into the operation and you are destined to failure. Even if you do find the energy for success and you are unhappy, is this not the worst kind of failure?

What Kinds of Products Can You Produce With Your "Likes" and Resources?

After a commitment has been made and resources have been inventoried, some things should become clear. A range of possibilities should be developed. Most of the people I know are happiest growing and marketing certain kinds of crops or animals. Those products they don't like are generally not as successful as those they most enjoy. Maybe you are interested in seasonal production with other kinds of enterprises filling the non-cropping periods, or maybe you would rather be involved in aspects of agribusiness other than production. Whatever the answers to these questions, knowing what you like to do and your resources will help to clarify those decisions.

Study Potential Markets

Having answered the questions above, it is possible to focus energy on the markets associated with the enterprises of greatest interest and potential. It is possible to get help in studying the market from the university through county and area extension agents, state specialists and researchers; from people who work in various aspects of those industries; and from potential clients. Some very critical questions that you need to find answers to include:

1. What is your product?
2. Who is your client?
3. What are the characteristics of the demand?
4. What are the competing products and who produces them?
5. What advantages do you have?

When considering your product, some factors that may be important include: similarity of technology to what you are doing now, similarity in the use and appearance of your product to other products on the market, and what is the strongest determinant of demand?

Determine Production Requirements

Once you have studied the potential markets, you are in a better position to study production practices that will allow you to be competitive. This is another area where university personnel can be helpful. In the long term, building your own library of technical information is extremely valuable. If local production, harvesting and handling information is available, it should be used, but information from other areas can be used with caution. For each crop, a complete production scheme should be constructed based on your own resources.

Make a Decision

It is never possible to make progress until a decision is made to proceed or stop. There are a lot of people who are roaring failures because they study things to death and never make a decision. This subject doesn't require discussion. When you have answers to the questions above, it's simply necessary to make a decision, to move forward or not.

Develop a Comprehensive Business Plan

Help is readily available when preparing a business plan. In addition to university personnel, your banker, local businesses and assistance organizations can provide guidelines. Your bank is interested in your success because they would like the loans that you inevitably will need, repaid. Part of the assurances to them that you will be successful is convincing them that you have the information above and you are organized enough to put it together in a plan.

Start Slow

The biggest disasters in agricultural production are those businesses that start new enterprises full scale before they have had the necessary experience. It is an exercise in patience, but it is wise to start slow. For most enterprises, the unit production costs are very high and so are the risks. Experience will help prevent big, disastrous losses.

Read! Read! Read!

Implicit in alternative crops is the limited amount of information available and the limited number of people with the expertise to really help you. Consequently, you should grow accustomed to educating yourself. There is a base line level of knowledge about agriculture in general, and your enterprise in specific, that will be invaluable in achieving success. A lot of this knowledge is going to require real independent study of reliable available information. Personally, I recommend accumulating a library of information (books, bulletins, pamphlets, etc.) in the areas that you work.

In summary, it is possible to be successful with alternative agricultural enterprises if you like the work and you study the crops/animals and markets sufficiently. There are no guarantees in this life, but proper planning improves the odds dramatically.

Luther Waters Jr. is professor with the department of horticultural science and director of the Center for Alternative Plant and Animal Products at the University of Minnesota. He has been involved extensively in vegetable research in the academic environment and in the private sector. He received his Ph.D. in horticulture from Oregon State University.

Organically Grown Small Fruit: Well Worth Your Investigation

Bob Coffey

My family and I are currently working a blueberry farm in northwest Arkansas. We have 7.5 acres of blueberries in production and a nursery that contains some 60,000 plants. These plants are sold to farmers that wish to expand their existing crop or to someone who wishes to start their own farm.

Blueberries are an excellent alternative crop to your present farming operation, and provide a profitable supplement to your income. With a couple of good acres of land you would be able to start a pick-your-own operation. The maintenance on a couple of acres could be handled evenings and Saturdays until harvest time, which requires the full-time attention of one family member.

The average family can expect to make a *full-time* living from approximately 12 acres. We have found it a must to belong to an association which sells our fruit for us. These associations exist in Alabama, Louisiana, Mississippi and Arkansas. Without a doubt more money can be made from blueberries per acre than any "legal" crop we know of. Blueberries exist in two strains: highbush varieties which are grown in Arkansas and north, and rabbit-eye varieties which are grown in the South.

Blueberries require very little fertilizer compared to other crops. However, you must have sufficient water supply for a good trickle irrigation system. After the third year of production, which is five years after planting, a well cared for crop will gross $10,000 or more per acre. Your cost to establish an acre of berries is approximately $2,500, excluding the price of the land.

I have written a small booklet titled, *How We Grow Blueberries In Arkansas*. If you are interested in obtaining a booklet please write: Bob Coffey, 1201 Longview Dr., Rogers, AR 72756.

My family and I are looking to sell our farm and retire to a smaller operation. Our plans are to put in a 2 acre organic farm consisting of blueberries, raspberries and blackberries. We highly recommend organic farming full time or as a supplement to your income. Organically grown fruit will sell for an average of 25 percent to 30 percent more than fruits grown with commercial fertilizers, fungicides, herbicides and insecticides. It is evident to me that organically grown foods will become very much in demand for two reasons: the consumption of fruit is rapidly exceeding that of vegetables and meat, and the news media is moving with full force to ban all chemicals used in agriculture. This will cause the public to look for and demand organically grown food products.

If you are interested in organic farming, contact your State Department of Agriculture for state regulations and a copy of how to certify your land. Organic certification and the hand labor required to grow these fruits are well worth the effort. The first organic growers in your area will reap the greatest rewards.

Organically grown foods have already proved to be a multi-billion dollar market. A three state market chain reports a 30 percent to 40 percent climb in demand per year. Another survey claims 82 percent of U.S. shoppers are concerned about chemicals on fresh fruits and vegetables. If you are in an area where the population is too small to take all your fruit by pick-your-own, the local stores (especially health food stores) will take all you can bring them.

With E.P.A. and media pressure on farm chemicals causing their decline and eventual ban, the large farmer depending on chemicals may be thrown out with the chemicals as the baby with the bathwater. I believe more nonchemical weed and insect controls will be developed to use on our organic farms. Another advantage to organic foods is no competition from cheap imports and large corporate farms.

Editor's note: For more information on organic certification programs, you can contact the following sources:

Keith Jones
Texas Department of Agriculture
P.O. Box 12847
Austin, TX 78711
(512)463-7467

Vern Hedlund
Washington Department of Agriculture
Dairy and Food Division
406 General Administrative Bldg.
Olympia, WA 98504
(206)753-5042

Betty Kananen
Organic Crop Improvement Association
3185 Township Rd. 179
Bellefountaine, OH 43311
(513)592-4983 or (513)593-1232

Fred Kirschenman
Farm Verified Organic
925 Brewster St.
Bridgeport, CT 06605
(203)334-7231

Mark Lipson
California Certified Organic Farmers
P.O. Box 8136
Santa Cruz, CA 95061
(408)423-2263

John Matthews
Texas Organic Growers Association
Route 1, Box 9
Hutto, TX 78634
(512)846-3741

Bob Coffey from Rogers, Arkansas, a residential designer by training and occupation, has a successful blueberry operation consisting of 7.5 acres of blueberries and a nursery with 60,000 plants. His previous farm experience includes raising angus cattle, but he considers his blueberry business more rewarding.

Roundtable Discussion

Alternative Agricultural Enterprises

William Heffernan, Presiding

I. The roundtable discussion began by identifying constraints and venturing recommendations for alleviating these constraints.

Constraints:

- Human Resource Development:
  - Lack of management skills on the part of producers.
  - Limited education and the inability to read.
  - Not able to identify and nurture entrepreneurial attitudes of potential producers.
- There is a lack of basic research to apply and demonstrate. The focus is on large, commercial, commodity producers.
- Markets:
  - Lack of information at all levels: academic institutions, government agencies, farmers.
  - Inadequate delivery system.
  - Lack of one-to-one contact.
  - The structure is there, but support has been cut back.
- Capital finance.
- Tradition:
  - There is a commitment to traditional products; a state of mind.
  - Organizations are resisting change.
  - Few people are interested in the alternatives.
- Risk.
- Lack of flexibility in farm commodity programs.
- Competition from other regions and countries.
- Lack of connection between producer and processors.
- Lack of infrastructure for small producers/processors to profitably produce and protect public safety (i.e. product health testing).
- Special inputs not available locally (equipment, chemicals).
- Irrigation is needed.
- Inadequate labor pool at current usage rates.

Recommendations:

- Early education in public schools, youth programs.
- Increased funding for research and extension activities focusing on alternatives:
  - Increase applied research.
  - Reduction of current funds.
- Market development:
  - Investigate and encourage wide marketing.
  - Establish marketing cooperatives.
- Get existing structures (agencies and organizations) to coordinate more closely. Perhaps reemphasize FAC:
  - Reorganize (i.e. county agents delivery system should move back to the one-on-one education approach).
  - Improve communication between alternative agriculture producers.
- Capital:
  - Establish venture capital pools with special attention on partnerships between producers and processor and distributors.
  - Establish producer controlled cooperatives.
  - Inform financial institutions of appointments in alternative agriculture.
  - Government should expand financial base.
  - Establish regional development banks to guarantee loans.
  - Redirect large/traditional crop check-offs to alternative crops R&D.
- Tradition status:
  - Develop mechanisms to give more visibility to alternative agriculture opportunities and individuals.
  - Encourage private industry to capitalize and develop alternative agricultural opportunities.
  - Modify welfare programs so they do not discourage recipients from working.
  - Expand existing businesses.
  - Give more flexibility to form commodity programs.
  - Set aside the Delta region as a special rural development pilot project.
  - Establish equipment/supply cooperatives.

II. Recommendations were also made to change existing federal and state policies.

Federal Policy Recommendations:

- Change farm commodity programs.
- Target farm legislation to address special needs of alternative agriculture such as financing, information, research, technology transfer, price support and price reporting.
- Market enhancement programs.
- Special financing for alternatives (FmHA).
- Grants for pilot projects.
- Defer (three year) payments on special alternative agriculture loans or provide three year interest free loans.
- Tax incentives to alternative agricultural producers and lenders.
- Monitor conservation and wetlands policies/regulations for special negative impact on Delta region.
- Allow welfare recipients to have a side-line alternative agricultural enterprise and still receive benefits.
- Promote and encourage the academic institutions to reduce resistance to and encourage alternative agriculture.

- Include alternative agriculture products in existing income/price support programs.
- Develop crop insurance programs.
- Emphasize human resource development efforts.

State Policy Recommendations:

- Establish local state committees to assist in developing plans for new enterprises.
- Develop market/promotional groups.
- Match federal funding for alternatives.
- Fund research for market development, research, education and demonstration efforts.
- Provide loans to producers.
- Review policies on social welfare programs (i.e. programs that restrict earnings)
- Direct financial resources to alternative agriculture.
- Make alternative agriculture shifts.

The Sustainable Agriculture Issue

John E. Ikerd

Public fears regarding possible contamination of foods with agricultural chemicals has combined with persistent concerns for soil conservation and water quality to make agriculture and the environment a major national issue. Fears related to Alar in apples and cyanide in imported grapes, for example, replaced fears of another drought in summer '89 news headlines. The Food Market Institute reported that 82 percent of food shoppers responding to a recent survey said that chemical residues in foods posed a "serious hazard" to their health (Steimel).

Many farmers are also concerned about their own health and the health of others as evidence mounts concerning negative impacts of agricultural chemicals on the environment. Testing of farm wells used for drinking water have shown that a significant number contain at least trace levels of fertilizer and pesticide residues. A recent report by the Agriculture and Law Institute indicated that 40 percent to 56 percent of the 568 farmers surveyed favored restricting fertilizer application in watersheds known to have high risk of water contamination (Institute for Alternative Agriculture).

Even farmers who feel that current farming practices are environmentally sound are concerned about the future of a chemically dependent agriculture. Farmers realize the costs of pest control are rising as pesticides become less effective. Nearly 500 insects and 50 weeds have become resistant to pesticides over the past few decades (League of Women Voters). David Pimentel estimated that farmers have increased their use of pesticides more than 30-fold since 1945 while pest-related crop losses have continued to climb.

The National Research Council issued a landmark report, *Alternative Agriculture*, in 1989 that gave instant credibility to those who had contended previously that an environmentally sound and resource conserving agriculture could be productive and profitable as well. That report also identified agricultural policy and inadequate research and extension programs on alternative agriculture at land-grant universities as major obstacles to achieving a more sustainable U.S. agriculture. Agriculture and the environment has evolved into a major public issue.

Are Lower-Input Systems Sustainable?

Much of the current environmental debate in farm press has centered on the concept of Low-Input Sustainable Agriculture or LISA. Research and education projects identified as LISA projects have been funded in the last three federal budgets through the agricultural productivity title of the 1985 farm bill.

Total funding for the three year period has amounted to less than $13 million. However, the LISA program has been the focal point of much of the public debate regarding agriculture and the environment, even though LISA funds amount to less than 1 percent of the total federal agricultural research budget (Smith).

Low-Input Sustainable Agriculture (LISA) is a relatively new term and thus has no universally accepted definition. However, LISA actually embodies two separate concepts: low-input (LI) and sustainable agriculture (SA). These two terms are related, but do not mean the same thing.

Sustainable Agriculture: A definition of sustainable agriculture is still evolving as a product of debate concerning agriculture and the environment. However, there seems to be a growing consensus that a sustainable agriculture must be made up of farming systems that are capable of maintaining their productivity and usefulness to society indefinitely. Sustainable systems must be resource conserving, socially supportive and commercially competitive, as well as environmentally sound (Ikerd).

Systems which fail to conserve their resource base will eventually lose their ability to produce. Thus, they are not sustainable. Systems which fail to protect their environment eventually do more harm than good, they ultimately destroy their reason for existence and thus are not sustainable. Resource conservation and environmental protection are the ecological dimensions of sustainability.

Farming systems which fail to provide adequate supplies of safe and healthful food at reasonable costs will not support social progress and ultimately will lead to political disruption. Agricultural systems of communist Europe and China are prime examples of systems that were not politically sustainable. Systems that are not commercially competitive will not generate the profits necessary for financial survival of producers and thus are not sustainable. Social supportiveness and commercial competitiveness are the socioeconomic or economic dimensions of sustainability.

In the long run, there is no conflict between ecologic sustainability and economic sustainability. In the long run, farming systems must be productive, competitive and profitable or they cannot be sustained economically. Also, systems must be ecologically sustainable or they cannot be profitable in the long run. Even in the short run, there is no conflict between ecology and economics from the standpoint of society as a whole. When all costs and benefits to society over time are considered, social costs will exceed social benefits only for those systems that are also ecologically sustainable.

The potential conflict concerning sustainability arises between individual producers and society in the short run. In the short run, systems that are most profitable for individual farmers may or may not be sustainable. Also, sustainable individual farming systems may not be profitable in the short run. In such cases, agricultural sustainability may require government involvement. Government subsidies and penalties can be used to reconcile differences between private and social costs and benefits so farmers will find it in their self interest to make decisions that also are in the interest of society in general. Alternatively, government funded research and extension programs can facilitate development and adoption of farming systems that are both ecologically sound and economically viable.

Low-Input Vs. Sustainable: The low-input or LI part of LISA, is generally associated with farming systems which rely less on external purchased inputs, such as chemical fertilizers and pesticides, and more on internal resources such as land, operator labor and management (Rodale). There is no clear division or point of separation between low-input and high-input farming systems. Thus, *lower*-input rather than *low*-input might be a more appropriate term. Systems become lower-input if they reduce their reliance on external inputs and increase reliance on internal resources. Higher input systems, on the other hand, rely more on external inputs and less on internal resources.

Lower-input systems may or may not be more sustainable than higher input, conventional farming systems. Lower-input systems tend to be more resource conserving and environmentally sound than conventional systems. For example, lower-input systems that use less synthetic chemical pesticides typically represent lower environmental risks than do higher input, chemical intensive systems. However, major reservations and questions have been raised regarding the productivity or ability of lower-input systems to support growing populations with safe, healthful, food supplies at reasonable prices and do so profitability and competitively with higher input systems (Ruttan).

Lower-inputs is not an end, but rather a means to an end (Shaller). Reducing reliance on external inputs is one means or strategy for achieving the end or objective of greater sustainability. However, reducing inputs may or may not be an *effective* means of achieving sustainability. Economic viability and ecological soundness are both necessary, but neither alone is sufficient in ensuring long run sustainability.

Sustainability Requires Survival

Sustainable farming systems must be able to survive adversity. The Rodale Institute talks about five Rs of sustainable systems: resistance, resilience, regeneration, re-design and replenishment (Heart). Shocks and associated threats to survival are an inescapable aspect of the ecology and economics of agriculture. Sustainable systems may resist, absorb, recover, adjust or be restored, but somehow they must be able to persist under conditions of periodic ecologic and economic adversity.

A sustainable farming system must be able to survive drought, floods, pest outbreaks and other physical shocks to the ecological system. It also must be able to survive short-run economic losses due to periodic crop failures, depressed markets and rising input costs that characterize the agricultural sectors of most economies. Sustainable systems may be unprofitable at times, possibly even for extended periods of time, but they must be able to resist or recover from adversity.

Farming systems that are productive and profitable under favorable weather and market conditions may be highly vulnerable to adverse physical or economic shocks to the system. Systems that appear to be sustainable even under average conditions may not be able to survive during adversity. Such systems may not be sustainable in the long run even though under average conditions they could be productive and profitable.

The Issue of Sustainability

The pursuit of competitiveness and profitability has driven U.S. farmers to greater reliance on external inputs. Competitive pressures have forced farmers toward greater specialization as a means to greater efficiency. Commercial chemical fertilizers and synthetic pesticides have allowed farmers to abandon crop rotations and mixed livestock cropping systems in favor of more specialized cropping and specialized livestock systems. Low energy prices also allowed economic use of larger, more specialized equipment and production facilities which encouraged greater specialization.

Increased specialization has allowed farmers to realize economies of scale in production, marketing and financing in their operations. Specialization has resulted in increased efficiency of farm operators' labor and management resources. However, specialization has meant greater reliance on commercial fertilizers, herbicides, insecticides and other external inputs.

The trend toward greater reliance on external inputs has not been limited to chemical fertilizers and synthetic pesticides or non-renewable energy-based inputs. Specialization also has meant greater reliance on borrowed capital and hired labor, and on more specialized knowledge and management skills in the form of paid consultants.

Rising Costs of Specialized Systems: Efficiency gains from specialization have been generally recognized and widely accepted for centuries as an economic fact of life. However, the reliance of specialized farming on greater use of external inputs has raised significant economic as well as ecologic questions. First, there are growing indications of declining effectiveness of the technologies which support specialized systems.

Increased concentration of single crops within a geographic region increases pest pressures for that crop. Increased use of pesticides is then required to maintain control of pests. In addition, insects are becoming resistant to insecticides and require higher rates of application or new insecticides for control. New insects sometimes replace the old. Beneficial insects often are destroyed along with the pests requiring even greater reliance on insecticides at higher costs.

The same types of problems are appearing for herbicides. Regional specialization increases weed pressures requiring increased herbicide use. New resistant weeds often appear after others are brought under control. In addition, herbicide carry over and build up in some soils can cause problems with following crops.

Previously fertile soils in some areas have lost organic matter and natural fertility through monocropping, conventional tillage and removal of crop aftermath year after year. Lower organic matter has meant less ability to hold water and nutrients in root zones, meaning lower yields from a given level of water and fertilization or higher fertilizer and irrigation costs to maintain yields.

Other cost of increasing specialization are beginning to show up in the environment of farm families and farm workers. Health risks in handling pesticides, for example, have become a major issue in farm safety. These risks eventually translate into less effective pest control, higher labor costs or greater health risks for family members.

Chemical contamination of farm water supplies is another emerging concern of farm families. Nitrate problems in groundwater may be attributed as much or more to organic sources such as livestock waste

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and crop residues, as to use of commercial fertilizer. However, this issue, as much as any other, has increased the awareness of farmers to the potential environmental hazards of chemically dependent farming.

Until recently, the environmental costs of increased use of commercial fertilizers and synthetic pesticides were external to the farm or imposed on society in general. The health risks to farm workers and farm families are internal costs and thus command the immediate attention of farmers.

In short, long-term trends in fertilizer and pesticide use seem to point to an increasing cost of supporting specialized farming systems. Research is currently underway to validate or refute this hypothesis and, if valid, to evaluate its significance.

The Question of Sustainability: Are current agricultural systems in the U.S. sustainable? This is the crux of the sustainability issue. Many farmers, commodity groups and agribusiness firms argue that there is no evidence that our current system is not sustainable. They contend that U.S. consumers have the most abundant, healthful and safe food supply in the world and that people are leading longer, healthier lives as a result of modern agriculture.

Environmentalists, on the other hand, argue that the evidence of environmental degradation, such as chemical residues in water supplies, is conclusive and it clearly indicates excessive use of synthetic chemicals in farming. Consumer advocates argue that we can't wait for future cancer and other health consequences of consuming chemically contaminated foods before we restrict their use.

Conservationists point to the nonrenewable nature of soil, fossil fuels and many water sources as justification for social constraints in resource use. These groups contend that delays in addressing the issue of the negative ecological impacts of conventional farming can only add to growing, possibly irreversible, risks to people and damage to our environment.

The current public debate is between those who would continue to emphasize productivity and profitability as a means toward the end of sustainability, and those who feel that agricultural sustainability is threatened by current farming practices which waste scarce resources, degrade the environment and present unacceptable risks to consumers. Neither group is opposed to the objective, they differ only with respect to the means of achieving sustainability.

Toward a More Sustainable Agriculture

Sustainable farming is neither a matter of minimizing purchased inputs nor of maximizing profits. Sustainability cannot be achieved through a predefined set of management practices or a recipe for success. The socially optimal balance between ecology and economics must be derived region by region, farm by farm, crop by crop and field by field.

Competitiveness and profitability of various systems can be changed through public policies which regulate, penalize and reward farmers for various conservation and environmental practices. However, changes in farmers' management decisions may affect sustainability more than changes in farm policies.

Farmers have always been willing to try and farm better. At different times the term better has referred to conservation, to production and to profits. Now, many are saying that better farming means more environmentally sound. Systems that minimize environmental impacts, however, may be no more sustainable than those that maximize production or profits.

Better farming means balanced farming. Better farming means balancing ecologic, social and economic considerations for short-run survival and long-run sustainability. Most farmers can farm better than they are farming now, but better farming will require more research and information that is relevant to a balanced approach to farming. Better farming will require integration of ecology and economics into a workable, farm-level system for sustainability.

Regulations, penalties and subsidies may be required to achieve sustainability in some cases. However, public policies that support research and information may be more important than regulatory policies in the long run. Funding of LISA research and education programs over the past two years has been a step in the right direction.

"People are more likely to change their behavior if they believe they can change, are shown specific examples of what to do and are given a chance to practice their new skills so they build confidence in their ability. People need much more than a lecture." (Bandura) This should be a guiding principle in public policies which support agricultural sustainability.

Farmers need believable, research-based information on workable, balanced systems of farming. They need to see these systems working on research stations and on their neighbors' farms. Farmers need decision support systems that will allow them to organize, evaluate, integrate, and synthesize information and observation into systems that are sustainable on their own farms. They need much more than a lecture.

John E. Ikerd, as project leader with the Low-Input Sustainable Agriculture Farm Decision Support System (LISA-FDSS), is dedicated to helping farmers organize, synthesize and use the full range of LISA related research data and extension information in developing sustainable and profitable farming systems. Previously he worked in extension agricultural economics positions and in the private food industry. He received a Ph.D. from the University of Missouri.

References

Hart, Robert D. *Design and Evaluation of Sustainable Agricultural Systems.* Paper presented at Food and Agriculture Organization (FAO) of United Nations: Rome, Italy, July 1988.

Ikerd, John E. *A Search for Sustainability and Profitability.* Paper presented at national Soil and Water Conservation Society Conference: Omaha, NE, March 1989.

Institute of Alternative Agriculture. *Alternative Agriculture News*, 7:7, July 1989.

League of Women Voters. *America's Growing Dilemma: Pesticides in Food and Water.* The Food Forum Education Project Citizens Guide: Washington, D.C., 1989.

National Research Council, Board of Agriculture. *Alternative Agriculture.* Washington, D.C.: National Academy Press, 1989.

Pimentel, David. Presentation to American Chemical Society annual meeting in Miami Beach, FL: Associated Press, September 20, 1989.

Rodale, Robert. *Agricultural Systems: The Importance of Sustainability.* National Forum: Phi Kappa Phi Journal. Louisiana State University, Baton Rouge, LA, LXVII:3, Summer 1988. pp 2-6.

Ruttan, Vernon W. *Sustainability is Not Enough.* Better Crops, Potash and Phosphate Institute. Atlanta, GA, Spring 1989. pp 6-9.

Shaller, Neill. *Mainstreaming Low-Input Agriculture.* Paper presented at national Soil and Water Conservation Society Conference in Omaha, NE, March 1989.

Steimel, Dirck. "Battle shaping up on use of pesticides," *Kansas City Star.* Kansas City, MO, June 4, 1989.

Sustainable Agriculture in the Lower Mississippi Delta Region

Fee Busby

Agriculture has been and remains a major industry throughout the Lower Mississippi Delta. Approximately 21 percent of the population is employed in farming, farm supply, food and fiber transportation, processing and marketing. Twenty-three percent of the states gross products comes from agriculture. Agriculture is not just farming, although farmers produce the "raw" crop and livestock products that fuel all other parts of the system. Agriculture is big business.

Development and adoption of scientific and technological production and processing practices, a well developed transportation and communication infrastructure, and supportive government policies have allowed U.S. agriculture to become a major supplier of world food and fiber products. Despite the successes of the past and present contributions to society, agriculture in the region and nation is facing many challenges that threaten the sustainability of many farms and agribusinesses. Examples of these challenges include:

- Less money available for commodity support programs.
- Less money for agricultural research, education and extension.
- More regulations on the use of fossil energy-based pesticides, fertilizers and other chemicals.
- More demands for on-farm conservation practices.
- Increased cost of fuel, machinery, labor, agricultural chemicals and other inputs.
- More pressure for open markets and fair trade in agricultural commodities.
- Increased demand by consumers for an even greater abundance and diversity of food and fiber products.
- New products from biotechnology research which may increase production of agricultural commodities and decrease prices to farmers.
- Increased rate of information flow.

Possibly the most painful challenge faced by agriculture is the concern expressed by many consumers about agricultural practices used by farmers. The public has supported agriculture during the past 50 years as agricultural practices changed. However, public support of agriculture is no longer assured.

Dr. Sandra Batie, professor of agricultural economics at Virginia Polytechnic Institute & State University and current president of the American Agricultural Economics Association, described the environmental issues associated with U.S. agriculture in the following manner:

> "Non-agricultural groups are increasingly challenging agriculture as a polluter of the environment. Policy responses to findings that groundwater in some cases is contaminated with farm chemicals demonstrate that there are limits to good will toward farmers. Society is prepared to socially control the use of agricultural technology if necessary in order to protect the environment as well as the safety of food and water. In turn, agricultural leaders and scientists are increasingly expected to give priority attention to research issues and approaches that will enhance the

quality of the environment. They can no longer give exclusive attention to ways to make agriculture more 'efficient' and more productive of food and fiber." (*Choices*, 1988.)

These public concerns have been translated into questions of the sustainability of U.S agriculture. Sustainable agriculture is an integrated decision making strategy that (1) is profitable to participants at all levels of the food and fiber system, (2) uses environmental resources in such a way that productivity is ensured in the future as well as today, (3) takes advantage of naturally occurring regenerative attributes of biological and ecological systems, (4) is culturally compatible with the value systems of those involved in the agricultural system, and (5) is acceptable to the public. It is essential that sustainable agricultural strategies deal with all of these issues.

The challenge is not to define what is sustainable, but to define what may not be sustainable. Once we conclude that agricultural activities or businesses may not be sustainable, then appropriate adjustments can be taken. Thus, the goal of sustainable agriculture is to guide the evolution of agriculture in a profitable, productive, environmentally and ecologically sound, culturally and socially acceptable manner.

Almost 500 participants from 21 countries met at Ohio State University in September 1988 to review scientific components of sustainable agriculture. The symposium concluded that:

> "Modern agriculture in developed countries depends on high inputs of inorganic fertilizers and synthetic chemicals for pest control and tends toward monoculture of cash crop varieties that require such inputs. These practices have increased overall productivity, but have also led to over-production of certain crops in the U.S. and Europe, thereby decreasing the profit margin to farmers. They also have the potential to accelerate erosion of soils and contamination of water. Thus, there is a growing awareness towards adopting more sustainable and integrated systems of agricultural production with reduced dependence on chemical and other energy-based inputs. Such systems can often maintain yields, lower the cost of inputs, increase farm profits and lessen ecological problems."

Practices that are profitable for farmers but are restricted or eliminated by policies passed by city dwellers because of concerns about their water or air supplies are not sustainable. Regulations passed to deal with an environmental issue that interrupts our ability to feed people are not sustainable. Practices or business organization strategies that ignore the reality of finite fossil fuel supplies place the food and fiber system at risk. Dialogue must occur that allows the development of compromise and consensus in dealing with complex issues. What adjustments need to be made to address these and many other issues related to agriculture in the Lower Mississippi Delta?

The U.S. government, in response to these growing concerns about agriculture, established the Low-Input Sustainable Agriculture (LISA) development program as part of the 1985 Farm Bill. This program has been hailed by some as an answer to farmer profitability and a solution to farmer caused environmental problems. LISA has been damned by others as threatening the high productive capacity of U.S. agriculture.

LISA is neither of these. It is a small grants program in USDA that is encouraging researchers, extensionists, farmers and others to develop new ideas about farming and related businesses. Unfortunately, the "low-input" phrase has caused conventional farming to be classified as "high-input." This has resulted in conflict that has prevented constructive discussion about critical issues facing agriculture. We need to progress beyond this controversy. We must focus on the most important issue of sustainable agriculture--the ***proper-input*** of resources needed for successful farming and agribusiness enterprises.

Research, extension and farming activities to encourage proper-input include integrated pest management (IPM); crop rotations including nitrogen--fixing legumes; cover cropping to prevent erosion and increase soil organic matter; more precise targeting of kind, amount and timing of fertilizer and pesticide applications; diversified crop, livestock and management system development; agricultural and forest waste management; and value-adding processing. These activities and more have been targeted toward sustainable farming practices and systems.

It is appropriate that attention be given to sustainable farming because farmers purchase the supplies and produce much of the raw products that fuel the rest of the agricultural system. However, we will not achieve a more sustainable agricultural system in the Delta by helping farmers reduce fertilizer and pesticide inputs while agricultural supply firms are left without opportunities for success.

The agribusiness community has many questions and concerns about sustainable farming and ranching practices that reduce chemical and other energy-based inputs. Reduced use of agricultural inputs will impact company profits unless companies develop new products and services to meet new demands. To successfully deal with questions of agricultural sustainability the entire agricultural production, processing and marketing systems must be involved. Threats to individual livelihood and company success must be reduced. A wide variety of agricultural interests must help solve problems that threaten the sustainability of U.S. agriculture.

An important proper-input that must be continually integrated into sustainable agricultural strategies is knowledge. It is necessary to understand and productively utilize information interactions that exist on farms or between farms, supply firms and other agricultural industries. Helping develop and disseminate knowledge will become a major agricultural growth industry.

The Lower Mississippi Delta region is blessed with a climate and soil that is ideal for the production of many agricultural crops. Until recently, most acreage was dedicated to producing a few commodity crops and agribusinesses were focused on supporting, processing and marketing these crops. Small acreage farmers cannot make a living by producing commodity crops--per acre profit is simply not great enough.

There is great interest in producing vegetable and fruit crops which are of much greater value on a per acre basis. Most work has gone into producing and marketing fresh produce. Some of the production is not suitable for the fresh market. Processing industries are needed so that crop value is not lost when produce is not suitable for the fresh market, to add additional value to the total crop and to provide jobs for local residents. Small scale industries that are partially or totally owned by the farmers are needed.

Consumers are concerned about changes in U.S. agriculture. An important component of social acceptability is a secure, reasonably priced food supply. Food safety, environmental protection and animal welfare are also issues of concern to the public. Our agricultural production, processing and marketing system must address these and other potentially conflicting issues. The public must be involved in this process.

There is an urgent need for an assessment and strategy development process to determine if and how approaches to sustainable agriculture can solve economic, productivity, environmental, ecological, cultural and social problems. We must facilitate the continuing evolution of our agricultural industries in the Delta. This conference is a first step. The commission must continue the dialogue.

Frank E. "Fee" Busby is program director/U.S. Programs, Winrock International Institute for Agricultural Development. He has more than 20 years experience in agriculture and natural resource management and 18 years experience in an academic setting. He received his Ph.D. from Utah State University.

Roundtable Discussion

Sustainable/Alternative Agriculture/Resource Conservation

Clark Garland, Presiding

I. The roundtable discussion began by identifying constraints and venturing recommendations for alleviating these constraints.

Constraints:

- Tradition is the mind-set of farmers and professionals.
- Frequently there are conflicts among economic, environmental, societal and sustainability issues. Short-term planning and decision making tends to reflect a "look out for yourself" attitude.
- A research base for sustainable agricultural systems is not available to provide information on what works, what does not work and the impacts.
- The managerial skills required for complex diversified farming systems.
- Some programs have negative connotations with potential users, agricultural leaders and input suppliers.
- Limited access to information.
- Federal commodity programs can discourage diversification.
- Lack of market differentiation for crops and livestock.

Recommendations:

- In the long run, encourage federal and state resources to be increased and allocated for research and extension activities. Educate producers and point out the dangerous intersections.
- In the short-run encourage more demonstrations on alternative enterprises and practices for this region.
- Establish a regional research extension effort of 1862/1890 land-grant institutions to look into sustainable/alternative agriculture in the Lower Mississippi River Delta region.
- Through educational programs, build understanding among farmers, processors and input suppliers of the needs and goals they share in common.
- Subsidize and encourage practices seen as positive toward the environment, society and/or future.
- Broaden policy discussions and educational program planning discussions to include agriculture as an industry.
- Increase national decision making; decrease emotion.

- Examine existing conventional enterprises and "fine tune" where necessary to become sustainable.
- Encourage farmer input into programs.
- Cooperate and work together.

II. Recommendations were also made to change existing federal and state policies.

Federal Policy Recommendations:

- In the farm bill, provide dollars earmarked for research; extension educational programs as well as farm demonstrations on sustainable agriculture methods. This is a higher priority for *funds*.
- Government farm programs should encourage diversification and flexibility. This relates to changes in the federal farm price and income support policy to deal with problems of maintenance of acreage base for payment eligibility. Existing farm programs discourage experimentation with new sustainable practices.
- Develop federal/international trade policy deeds so that U.S. farmers using sustainable practices are not placed at a disadvantage with farmers in other countries.
- Coordinate existing water policies among states within a region.
- Education is the key.
- Impose taxes on potentially polluting agricultural chemicals and use funds to encourage development of alternatives.

State Policy Recommendations:

- States should be encouraged to provide funding for research, extension activities and *on farm* demonstrations in cooperation with farmers, agribusiness and land-grant researchers/extension personnel.
- Build information about the importance and nature of agriculture and farming into primary and secondary school systems.
- Regulate use of potential agricultural chemical pollutants and impose fines on point source polluters.
- Develop a statewide planning and development framework beforehand to have a road map before crisis develops.

Institutional Support for Agriculture in the Lower Mississippi River Delta Region

Preston E. La Ferney

It is an honor and a pleasure to be part of this important assessment of our Delta Development Challenge. I am very pleased to see agriculture singled out for special attention and am most happy to address briefly the institutional support for agriculture here in the Delta.

I wish to commend and thank Senator Dale Bumpers for the existence of this important study. The further economic development of the Lower Mississippi River Delta is a tremendously exciting challenge and a great and timely opportunity.

To focus our collective attention on the set of issues surrounding the future development of the Lower Delta is based on a key, time-proven principle: regionality. The Delta region has been, is, and will continue to be a major factor in our national food supply and international trade. It is a region of great natural abundance and future potential. We do face a huge and significant challenge to further develop this economically and socially significant region on a long-term, sustained, productive basis.

As I reflect on this challenge and opportunity, I see a particular need to catalog the broad array of good and worthy things we could do in the Delta region, and then *focus*; narrow down the scope to include a few well chosen, first steps necessary to a long-term, sustained course of development. Of all the many worthy things that might be done in development of the Delta region, a few broad areas loom large in their significance to development: *education*, *non-agricultural rural projects* and activities, and *agricultural enterprise*, to name a few.

Education in the broad sense, including youth training in K through 12, college, 4-H and FFA; continuing and adult education; and leadership development to provide skills needed as economic development occurs and to reduce the all-too-high levels of unemployment. Non-agricultural rural activities must include provision of health, water and sewage, transportation, recreation and other facilities to make communities attractive to people and to economic development. Agricultural enterprise I would define broadly to include production agriculture, marketing, food and fiber processing, food distribution and other supporting agribusiness.

This conference is focused on the latter--the role of agriculture in the further economic and social development of the Lower Delta. My remarks are addressed to the institutional support now available for facilitating the agricultural enterprise in the Delta in its development role.

To focus this conference on agriculture is very appropriate and well-placed. The Delta has a *rich heritage* and strong *record of success* in the agricultural enterprise. It has a tremendous, extensive *natural resource base* undergirding agriculture: the land, water, timber, people, location and climate are second to none. Additionally, the region has an impressive, effective set of *developed resources* in our existing institutions: The private farming and agribusiness sector, the strong federal presence through the various agricultural and related agencies, and our well-established system of universities, which I am addressing in particular today--the land-grants, plus other public and college universities.

The Delta's History and Heritage in Agriculture

Delta agriculture was built, and now thrives on, private enterprise. Farmers, bankers and agribusinesses driven by the profit motive are well established. These activities are complemented by a strong federal presence in the form of expert people and funding provided through various agriculture-related agencies (being addressed separately on this panel). State and local public support round out the Delta's agricultural enterprise. A major part of this later component is provided through our university system.

The land-grant university system was established through a series of federal legislation over about a 50-year period. The Morrill Act of 1862 provided federal money and state land for the teaching of agriculture and the domestic and mechanical arts at the college level in each state. The Hatch Act of 1887 added a research component to the system. The second Morrill Act of 1890 extended these teaching and research benefits to the 17 historically black institutions. The Smith-Lever Act of 1914 added the extension component.

I single out as a particular strength, the 1890 institutions, five of which are located in Lower Delta states. They have a long, distinguished record of providing education, research and technical assistance in agriculture, particularly to limited resource audiences. The land-grant university system is characterized by close federal/state/private sector coordination, emphasis on education for the common man, attention to the applied and the practical, and is built on the inherent synergism among teaching, research and extension.

The impact of the land-grant system has been most impressive. We are the best fed people in the world; we accomplish that on about 11 percent to 12 percent of our annual incomes; we are the envy of the world; we have in place, alive and well, an excellent university system for teaching, research and extension; and the contribution to economic and social development is moving "way beyond just production agriculture" to include broader aspects of agriculture, business, engineering, education and the social sciences.

A recent *Wall Street Journal* article stated that "the land-grant system is perhaps the single most revolutionary innovation in American Higher Education." I submit that it is among the most revolutionary innovations in American history, and that if fully unleashed, can and will make a revolutionary contribution to the future economic and social development of the Lower Mississippi Delta region.

Current University Strengths

The Delta states have strong systems of land-grant and other universities. Since most agricultural support is provided through the land-grant system, I will address only the land-grant strength. The land-grant system in each Lower Delta state is very extensive and strong internally, addressing both state and regional issues, as well as issues identified as national concerns. Additionally, there is in place a time-tested structure for regional cooperation in agricultural research and extension. Each state also coordinates the 1890 and 1862 programs--a real strength in addressing Delta agricultural and social issues.

Accomplishments of the system have been many and significant. Perhaps the strongest examples have been in production agriculture: new technology leading to greater efficiency and profitability; plant breeding to provide varieties specifically adapted to the state and region; integrated pest management; research verification through extension; and computer technology specially developed for the producer. Whole new industries have ensued from earlier research: poultry has grown from a backyard to main-street-American enterprise and a viable catfish industry with tremendous growth potential has been forged in the Delta. Development of food processing technology has become a major focus of our research and is impacting markets through form, quality, nutrition and safety of food.

The approximate (rounded) *current* strengths of the five Lower Delta state land-grant systems of teaching, research and extension in the five Divisions of Agriculture on an *annual* basis are:[1] annual funds, all sources, $295,000,000; total people employed (scientists and support), 8,510.

Approximately 48 percent of funds and manpower are allocated to research; 46 percent to extension; and 6 percent to academic teaching.

Given that these agricultural research and extension programs are already in place and are underfunded, the return on marginal investment is very high--published estimates[2] for the U.S. generally range from 30 percent to 50 percent and would be expected to be somewhat higher in the South because of lower public investments in the past. One study for the southern region summarized in the same reference, shows a 130 percent return on investment in agricultural research.

From the several studies summarized in this reference, only one conclusion can be drawn: Returns to investment in agricultural research and extension in the region are exceptionally high. I would hope the Commission would weigh heavily these high rates of return in their deliberations and conclusions. Perhaps the closest the Delta comes to a truly world-class act is the land-grant system with statewide teaching, research and extension programs in agriculture--and the capability to coordinate these statewide programs on a regional basis.

Land-Grant Agenda in Agriculture for Future Economic Development of the Lower Delta Region

While the land-grant agenda for agricultural research and extension is increasingly dynamic, it now appears that several key topics will rate priority attention in the foreseeable future. I will briefly highlight a few topics to give an indication of the types of agricultural issues likely to be of special interest and concern in the future economic development of the Lower Delta.

Profitability in agriculture will remain a primary concern. This is fundamental to a viable agriculture; thus, it has been a traditional concern of agricultural research and extension. The newer, still evolving emphasis in this area is termed **sustainability** and includes attention to profit in future years, as well as the present year, environmental implications and the broader social implications of changes in agriculture, particularly in rural areas. Sustainability is a significant evolution toward even higher quality research and extension in the land-grant system.

Bio-technology: Applications of molecular biology to the betterment of agricultural productivity, sustainability and the environment. Large investments have already been made in the public sector and American universities, to explore these new technologies. The evolving need is for practical applications of the new technologies in agriculture--the kind of thing our Delta land-grant universities do best.

Exploring *the rest of agriculture* and *supporting industry* beyond the farm gate is of increasing importance in the Delta. The concept of **value-added** is being explored--going beyond farm production to add more value to the product *in the region* via processing, innovative marketing, transportation, distribution and services by a host of input suppliers. Adding more value creates new jobs, adds revenues, and provides more economic activity in the region. Examples of these value-added activities and their positive effects abound in the Delta states and include poultry, catfish, rice, soybean and horticultural/fruit crops processing, marketing and distribution.

Alternative agricultural enterprises will be sought out, adapted to and developed in the Delta region. Fish, horticultural and fruit crops, specialty crops and further expansion of poultry production/processing are seen as offering significant potential to further diversification and profitability of Delta agriculture.

Water use and management is a must area of exploration. Historically, one of our most valuable and plentiful natural resources, water, is in ever-increasing demand for a plethora of uses, making it increasingly valuable and worthy of special attention.

Policy analysis is crucial to the future of Delta agriculture. First, federal policy on domestic and international food and agriculture activity will largely determine the future role of agriculture in the development of the Delta. Who can provide the necessary quantity and quality policy analysis and policy will be crucial. Reinschmiedt and Green suggest that two policy sets will be required: (1) a rural transition policy based on education and training to increase productivity and enhance mobility, and (2) policy on use of "new" resources to diversify the existing economy while supporting the traditional.[3]

Improvements in **nutrition, diet and health,** especially relating to food, will be pursued through research. The land-grant system is uniquely positioned and organized for the necessary increases in this crucial area.

Youth activity and training: Training and directed educational experiences for all rural youth, especially those at risk, is a must. This is in the area of education which I mentioned up front and agreed to not explore, but it is so essential to the future of agriculture in economic development that I must single it out as a priority area of activity for our land-grant institutions.

Developing **international** markets and international technical assistance will be required. We can not afford to be complacent or even passive in these efforts. Both are especially important to the quantities of agricultural products needed from the Delta area. Institutions like Winrock International and Heifer Project International provide significant institutional strengths in this area.

The land-grant system is the primary, and usually the sole, source of information and technology in these and a host of other areas critical to the future role of agriculture in economic development.

Strategies for Consideration by the Delta Commissions

The following are a few suggested strategies for harnessing the tremendous potential role of agriculture and supporting institutions, such as land-grant universities, in effective economic and social development of the Delta.

It is suggested that the Commission build its case on the principle of **regionality.** Identify regional needs and target regional strengths to meet those needs. The unique regional characteristics include educational, social and economic needs; a unique regional economy; a unique regional socio-cultural base; a unique regional market opportunity; a unique regional natural resource base; a unique regional watershed; and a unique regional institutional structure in support of agriculture.

Focus on better **coordination** in the use of resources currently and potentially available in the region--less fragmentation and more concerted, planned, organized, joint effort among participants in economic development. This will involve the specific placing of responsibility--much of which can be placed on supporting institutions. The land-grant system stands ready to play a key role in a closely coordinated research effort in the Delta region through its regional research and extension mechanisms, which are specifically designed to bring together scientists from several states to focus upon clearly defined and shared issues and problems.

Give special consideration to the **agricultural education** issue. More of our best young minds must be attracted to the world of science in agriculture so that the human capital necessary for economic development will be forthcoming, and as a means of moving more people up the economic scale. The universities are the experts in human capital development. The magnet school concept deserves consideration--high quality schools with an agricultural science emphasis to acquaint students at an early age with the world of science in agriculture, might be structured and funded--perhaps using an adaptation of the vocational agriculture model, which also deserves the Commission's consideration. Rosenfeld cites the spillover effects of vocational agriculture training "beyond just agriculture" and indicates that vocational agriculture programs now include many of the activities and approaches currently recommended to improve secondary education in general.[4]

Focus on **food and agricultural policy** analyses and policy-setting strategies is essential. There is a need to re-look both domestic and international food and agricultural policy in the broadest sense: agriculture, food, trade, international fiscal and monetary, and even defense policy as it relates to food. The Delta potentially figures crucially in this area, both as a benefactor and a tremendous national resource. The land-grant university system is ready to be more involved in these analyses on an organized, concentrated basis, and is the primary source of truly objective information available for policy making. Consideration should be given to a top-notch, well-funded regional food and agricultural policy center.

The last three suggested emphases or strategies for consideration by the Commission are musts, and are offered in a sequence for emphasis:

1. Emphasize, explore and assess the **potential of agriculture** for future economic development. It is one of the Delta's greatest strengths and has potential to contribute immensely more than at present. The basis for this claim includes the tremendous natural resource base; the strong institutional capability *already in place* to complement the strong, viable entrepreneurial spirit in the private sector; the strategic location of the Delta for domestic food production, processing and international trade; and the presence of a time-tested regional research/extension structure for effective coordination among the states.

2. Regard as a **national investment** the further development of agriculture as the major force in the economic and social development of the Delta. Such an approach has great, positive implications for a continued cheap food policy in the U.S., national defense, viability of the national economy, national balance of payments and our international trade position.

3. Speaking of investment, the Commission should push strongly for earmarking of **significant federal funding** for agricultural research/extension/economic development in the Lower Mississippi River Delta region. Our nation has done this before in other regions with excellent results. The Delta region has invested heavily on its own. The return on investment can realistically be expected to be very high. **Capital clearly is the limiting** factor to greater productivity in agricultural research/extension/economic development at the present time.

Preston E. La Ferney is vice president for agriculture at the University of Arkansas. His previous positions include director of the Arkansas Agricultural Experiment Station and work with the Economic Research Service of the USDA. He received a Ph.D. from Oklahoma State University and has done post doctoral work at Stanford University.

Footnotes

1. Agriculture is defined broadly to include closely related fields of endeavor in most cases.

2. Hayami, Yujiro and Vernon W. Ruttan. *Agricultural Development: An International Prospective*. Baltimore and London: John Hopkins University Press, 1985, pp. 63-64.

3. Reinschmiedt, Lynn, and Green, Bernal. *Socioeconomic Conditions: The Mississippi Delta*. Mississippi Agricultural and Forestry Experiment Station, Mississippi State University, MS, December 1989, Bulletin 965, p. 13.

4. Rosenfeld, Stuart. *USDA Executive Notes*. Office of Government and Public Affairs, U.S. Department of Agriculture, Washington, D.C., December 1987, p. 3.

Institutional Support for Agriculture

Jack H. Winstead

Introduction

As we think about developing a strategy for the economic and social development of the Delta region, we must realize that our focus is to enhance agriculture in this area. Agriculture, agribusiness and aquaculture all play an interlocked role in the Delta region.

The Mississippi Food and Agricultural Council, composed of all agricultural federal agencies, see the need to coordinate and cooperate with other agencies to provide needed assistance and to better serve the public, including farmers and landowners. These agencies can provide timely technical and financial assistance to address major concerns. Federal funding of agricultural programs has long been of importance to all Mississippians.

Socioeconomic Conditions

A recently published study of the socioeconomic characteristics of the Lower Mississippi Delta region by the Mississippi Agricultural and Forestry Experiment Station in December of 1989, supports the following facts:

- Agriculture makes up nearly 40 percent of the industrial base of the Delta's central, non-metropolitan counties.
- The Delta depends strongly on agriculture as a prime source of income; especially as compared to the agricultural income from the seven-state area designated by the Lower Mississippi Delta Development Act. The agricultural services, forestry and fisheries sector contributes much income in the Delta region as compared to the seven states.
- The Delta region has experienced a decline in the number of farms, but an average increase in farm size. The distribution of farm sales classes further document the large-scale nature of farming across the Delta. Almost one-half (48 percent) of the farms in the Delta had sales of more than $40,000 in 1982, compared to the other seven states.
- Land use is predominantly devoted to crops (88 percent in 1982). The Central Delta's specialization in crop production has remained essentially unchanged while the Fringe Delta area has diversified slightly.

Recommendations

This points to the need to rely upon natural resource-based industries. Since we will have a strong reliance on natural resources, we will need to protect the natural resources we are trying to use wisely--our soil and water! Without this resource base, agriculture or aquaculture will not be sustained for future development and food and fiber production.

Food Security Act of 1985

The conservation provisions of the 1985 Farm Bill were designed to reduce soil erosion and protect wetlands. They require farmers and ranchers who participate in U.S. Department of Agriculture (USDA) Program benefits to develop and begin applying a conservation plan on highly erodible cropland to remain eligible. A conservation plan helps reduce soil loss to levels that are technically and economically achievable and should be applied by 1995. Currently, more than 12,000 Mississippi farmers have enrolled land in the Conservation Reserve Program. More than 700,000 acres in tenyear contracts will be planted to permanent vegetation on eroded land. More than 1.5 million acres are under conservation plans in the state, conserving highly erodible land. These plans are approved by local soil and water conservation districts. More than 18,000 acres have been planned to hardwoods in the Delta on marginal lands.

Swampbuster Provision

The 1985 Farm Bill also requires that producers who want to remain eligible for USDA Program benefits cannot drain any wetlands for agricultural production. Wetlands improve water quantity and quality. They also provide essential habitat for waterfowl and other wildlife. SCS currently has completed a contract with National Space and Technology Laboratory (NSTL) to identify those wetlands in the state. About one million acres are identified as wetlands in the Delta.

Water Quality

SCS is cooperating with other agencies and farm organizations through a water management team to implement demonstration projects for water quality. Projects include water-control pipe structures in the Delta, constructed wetlands for animal waste treatment or recycling catfish pond wastewater, and providing technical assistance to the five state Gulf of Mexico program to reduce agricultural pollution.

Research, Technical and Financial Assistance and Education

Research by private, state and federal supported institutions will be necessary to arrive at facts, solutions to resource base problems, and direction for delivery of services. Resource concerns in the Delta region include water conservation, water management, multiple uses of water, recycling for agriculture and aquaculture, quality of water and water supply. In addition, the soil resource base must be protected from water and wind erosion.

Technical and financial assistance can be used through cost-share programs, grants, individual demonstrations, community projects and loan programs. Education can be the key to understanding resources, skills and abilities needed to support the agricultural base. Special assistance will need to be provided to farmers with limited resources. Options and alternative operations will need to be explored and researched.

Delivery of Assistance and Services

We currently have the infrastructure in place for delivering funding and services through various agricultural agencies. There is a need, however, for additional funding and additional people to deliver the services in a more timely manner. Federal and state grants should be utilized to the fullest degree possible. Grants can be justified because of the need in economically depressed areas in the Delta.

Summary

The future of the Delta region depends, to a large degree, on the wise use of the natural resource base. The base can be of prime importance as an economic base, especially using the value-added steps to increase income and employment. There needs to be a constant means to conserve and protect the natural resources for future production.

The leadership in the Delta region can be supported by agricultural agencies with adequate funding and manpower to provide needed services. The agencies can provide needed support through cooperation and coordination. The future of Mississippi depends on the success of the Delta.

Jack H. Winstead, who has spent his professional career in the area of soil conservation, is deputy state conservationist for the state of Mississippi. He has done graduate work at Mississippi State University and the University of Oklahoma.

Institutional Support of Agriculture in the Lower Mississippi Delta Region

William H. Walker, III

Agriculture was the dominant force in the mid-south economy during the 1930s and '40s when I was growing up on a farm near Memphis Municipal Airport, nine miles south of Memphis. Horses and mules provided the power. Cotton, a labor intensive enterprise, was hand-chopped, hand-picked and hauled by wagon, a bale at a time, to the nearest gin. DC 3's provided commercial air transportation to and from Memphis Municipal Airport.

In the 1950s, mule power was replaced by tractors and equipment, and hand labor gave way to mechanical cotton-pickers and chemical technology. That South Shelby county farm vanished under acres and acres of concrete and asphalt, making way for federal express and intercontinental jet traffic at Memphis International Airport.

Today, agriculture no longer dominates the local economy. However, it is a significant part of the total activity in the region and must be included in recommendations for improving economic and social development in the Lower Mississippi Delta. The 1990s and beyond offer a whole new agenda of problems, challenges and opportunities for the people of the Lower Mississippi Delta region.

Every two and one-half years, the world population grows by the equivalent of the U.S. population (250,000,000+). At the same time, communications and international transportation are shrinking the globe so that our neighbors are no longer confined to the next farm, across the street or an adjacent county, but are drip irrigating crops in Israel, plowing water buffalo in China, applying U.S. farming techniques in Kenya, spinning U.S. cotton in Korea, crushing U.S. corn and soybeans in Japan, and eating "Big Macs" in Russia.

Daily, international visitors move throughout the Lower Delta region purchasing commodities, looking for business opportunities, attending our educational institutions and learning from our technologies. We are the Lower Mississippi Delta region in a world community.

Agricenter International was conceived and established to be an international showcase for the latest in agricultural technology. As a private, non-profit institution, it is developing as a high-tech center that can play an important role in realizing the agri-industry potential of the region. As a "neutral site" facility, it offers a place where public and private agri-industry can interact across disciplines and across state lines.

Already, activities are underway that involve the interaction of land-grant universities throughout the region. In addition, more than 58 companies have offices, exhibits, production demonstrations, hold meetings, seminars and training programs utilizing Agricenter International land and facilities. Agricenter International's ideal location in the region (the nation and the world) provides many opportunities for learning experiences through ongoing technologies, exhibits, shows and seminars.

Farmers can learn the latest in production techniques, and see the latest in equipment and products. They can see such alternative production opportunities as an aquaculture center, a green house complex and new crops suitable for the region. A forestry learning complex, under development, will emphasize the importance of forestry for the Delta region. Throughout the facility, sensitivity to environmental concerns is demonstrated in conjunction with best management practices.

The farmers market provides an opportunity for producers and consumers to sell and purchase high-quality, home grown produce, horticulture crops and crafts, with room for the growth of those alternative enterprises in the region. The quality of family life is encouraged and promoted through cooking schools, shows, exhibits and seminars. Already scheduled are such activities as the Farm, Home and Garden Show; the Home Expo; Southern Living Cooking School and Family Living Expo; and Festival of Trees.

New opportunities exist for Agricenter International to further meet the needs of the region. A database/clearing house needs to be developed to provide at one location, access to information that can be beneficial to farmers, consumers, businesses, educational institutions and communities. Such a system could be housed at Agricenter International and should be designed to access a variety of information centers providing national and international intelligence on a broad range of interests.

Such a need appears to exist and would provide an invaluable service to the region. I recommend that development of a database access center by given full consideration by the Lower Mississippi Delta Development Commission, and offer the assistance of Agricenter International where appropriate.

Agricenter International, as a private institution, is prepared to assume its role in the region, in complement to institutions, public and private, in promoting economic and social development and in improving the overall quality of life.

William H. Walker, III is president of Agricenter International in Memphis, Tennessee. He previously served as commissioner of agriculture for the state of Tennessee and assistant secretary of agriculture with the U.S. Department of Agriculture. He operates a greenhouse and a beef, cotton, corn, soybean and timber farm in Haywood County, Tennessee.

Roundtable Discussion

Institutional Support

Don Voth, Presiding

I. The roundtable discussion began by identifying constraints and venturing recommendations for alleviating these constraints.

Constraints:

- Lack of adequate financial and human resource support for the agencies involved in supporting Delta agriculture, especially research and extension and community-based organizations results from declining federal commitment, and inability of these poor states to pull up the slack to provide this support. Results in inability to attract and hold talented scientists, and may cause much of the turf consciousness.
- Uncoördinated, contradictory and sometimes conflicting perspectives and objectives of federal, state and other agencies and groups. This results in an inability to communicate effectively with clientele. The role of state and federal is changing, but is not at all clear. Federal is pushing on state, and state is unable to respond because of financial limits.
- Rigidity, shortsightedness and unresponsiveness of the institutions to their clientele, especially research and extension. They are focusing exclusively on production research, putting little emphasis upon problems of limited resource, alternative agriculture, sustainable agriculture and rural development.
- Lack of leadership and support for agriculture, especially alternative agriculture, by financing and credit institutions in the Delta.
- Traditional power base in the Delta still controls the institutions serving agriculture. This power base is not supportive of change and responsiveness to new conditions.
- Lack of support for agricultural research, extension and or agricultural education among leadership in the Delta.
- Declining role models for small and part-time farmers.
- Lack of knowledge of and insensitivity to cultural differences. Institutional responsiveness in context of racial issues of the Delta.
- Rigidity and wrong focus of agriculture policy and agriculture programs.

Recommendations:

- Lack of adequate financial and human resources:
  - Increased federal funding with funds specifically earmarked to the institutions of the Delta region. Their justification is that states of the Delta have poor economies and cannot support the load resulting from federal withdrawal. Funding to all agricultural support institutions, especially agricultural research and extension, and to 1890s and community-based organizations. Focus on special needs of limited resource farmers, alternative and sustainable agriculture. To stimulate regional cooperation, especially regional projects, public private partnerships and clientele involvement.
  - Increased state funding for dealing with special needs of limited resources, alternative and sustainable.
  - Eliminate or alter federal commodity programs and use funds to support agricultural research, extension, especially in 1890s and to support limited resources, alternative, sustainable and rural development.
  - Educate leaders as to the returns to involvement in and the importance of agriculture.
- Uncoordinated, contradictory and sometimes conflicting objectives, programs and regulations:
  - Retain a multi-state LMD agency which focuses upon agriculture to:
    - Serve as an advocate for the agriculture of the region.
    - Obtain funds, especially from Washington, D.C.
    - Influence objectives, rules and regulations of federal agencies to make these appropriate for characteristics of the region.
    - Coordinate programs and agencies in the region.
  - Give more flexibility to states and the region in implementing and developing the rules and regulations for federal programs, especially to make them appropriate for such areas, especially JTPA.
  - Use budgetary and management mechanisms to encourage collaboration and coordination.
  - Strengthen the FAC, involve state and other agencies in the FAC, and relate all of the FACs of the region directly to the LMDDC.
- Institutional rigidity:
  - Vigorously adopt new methods, developed in close communication with the clientele, especially limited resource. Include use of para professionals, careful targeting of audiences, and use of new and innovative methods of communication.
  - Make agricultural research and extension resources available also to private groups, community-based organizations. Emphasize on-going linkages between public and private agencies.
  - Alter reward structures in the institutions to focus more on dealing with applied problems and less upon refereed publication; promotion and tenure, etc.
  - Implement special committees, task forces, etc. to focus upon needs for research and support for limited resources, alternative, sustainable, rural development, to eliminate the bias toward traditional production research.
  - Adapt explicitly targeted strategies with special methods for small farmers, minorities and limited resource farmers.
  - Additional funding--see first constraint.
  - Coordination--see second constraint.

- Financing and credit:
  - Special, targeted funding focusing on credit and financing, including venture capital, development bank and technical assistance. Also focus on helping new starts in value-added, alternative crops, rural development and sustainable.
  - More flexibility in existing programs to be more responsive to Delta needs.
- Traditional power base:
  - Leadership training to stimulate new leadership, especially leadership among minorities, limited resource, etc.
  - Innovative educational programs dealing with issues such as regional needs, cultural differences, social class, etc.
- Lack of support for agriculture, agricultural research, extension, agricultural education in the region, and lack of role models for engaging in agriculture:
  - Develop pilot, magnet agricultural education programs in the Delta built upon an agricultural science model.
  - Vigorously educate leadership as to the returns to investment in agricultural research and extension in order to stimulate greater support and investment.
  - Target educational programs for youth, especially black youth, to get them interested in agriculture through in-school programs, internships, etc. Could use JTPA, for example.
- Racial awareness:
  - Institute programs of cultural and social understanding and sensitivity.
- Agriculture policy:
  - Increase flexibility of farm programs so as to encourage rather than to prevent, diversification and moving to sustainable and alternatives.
  - Eliminate or alter farm programs and redirect funds to LR, sustainable, alternative and rural development.
  - Retain farm programs another five years.

Federation of Southern Cooperatives/ Land Assistance Fund

Statement on the Status of Black and Limited Resource Farmers and the Potential for Cooperative Development

Ralph Paige

In my work with the Federation of Southern Cooperatives/Land Assistance Fund (Federation/LAF), I have traveled through and worked with family farmers and community organizations in eastern Arkansas, the Boot-heel of Missouri, the Mississippi Delta, Louisiana and most of the areas served by the Lower Mississippi Delta Development Commission (LMDDC). The Federation/LAF works with more than 25,000 low income families, organized into 100 self-help community-based groups across the South. About one-quarter of our members are located in the service area of the LMDDC.

Approximately one-half of the Federation/LAF's membership are primarily black farm families owning an average of less than 100 acres of land each. The remainder of our membership are low income rural residents who are generally employed in low wage or seasonal jobs, often related to agriculture, in small towns and rural communities.

For more than two decades, since 1967, the Federation of Southern Cooperatives has worked at the grassroots level in rural communities around the South. Through community-based cooperative economic development efforts, the Federation and its member cooperatives and credit unions have worked to generate new income, jobs, services, training, awareness and a spirit of self-help and change for many low income and economically exploited people in some of the most depressed and persistently poverty-stricken rural counties in America.

The Federation/LAF is dedicated to the cooperative principles and operating philosophy as the best means to ensure that poor and minority people will share in the economic system and receive an equitable portion of the ownership of resources and distribution of economic benefits of our society. Cooperatives, with technical and financial support from public and private sources, are a flexible development tool to allow poor people, through democratic participation and mutual aid to build economic power, political influence and social stability. The Federation/LAF has assisted many local grassroots rural groups in using the cooperative structure to build new self-help institutions to share economic power and political progress in their local communities.

The Federation/LAF, working with low income people and through their own self-help organizations, seeks to deal with rural poverty in a regional comprehensive and coordinated approach. We see some of the problems of rural people: substandard housing, low literacy rate, unemployment and underemployment, idle holdings, poor health care, hunger and malnutrition as potential opportunities for the development of self-help strategies to change and correct these situations.

Cooperatives--which make productive use of land, grow food, rehabilitate and construct new housing, develop jobs and teach new skills--are creative, people-oriented mechanisms which help grassroots people find solutions to their own problems. The

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cooperative movement teaches individuals to replace despair and depression with hope and positive accomplishments.

Special Problems of Black and Limited Resource Family Farmers

There is currently a *crisis* in rural America for family farmers. This includes economic problems from low prices; losses from the severe droughts of the 1980s, lack of credit and problems with past credit; as well as social problems of family dislocation and rural community decline resulting from farm foreclosures, failures and sellouts.

More than one-half of America's remaining two million farmers are experiencing serious financial and debt problems. For many, these difficulties will mean the end of a life and a livelihood in farming, unless farmers band together and fight in an organized fashion to persuade the government to change its laws and policies affecting family farmers.

Black family farmers in the rural South have been in a *continuous crisis* for the past 50 years. Black farmers have faced not only the general decline in the farm economy, but also neglect, racial discrimination and economic exploitation. Black farm ownership and farm population has declined steadily and at a more rapid rate than for white farmers for most of this century. In 1910 there were more than one million blacks engaged in farming owning 15 million acres, while by 1985 there were less than 50,000 black farmers owning less than four million acres. Black farmers are still losing land at an astounding rate of 1,000 acres per day or 350,000 acres per year.

A 1982 report by the U.S. Civil Rights Commission, titled *The Decline of Black Farming in America*, warns "that unless the policies of the U.S. Department of Agriculture are changed, there will be no more black farmers by the year 2000." We estimate there are 8,000 to 10,000 black farm and landowning families in the counties encompassed by the LMDDC service area, and a corresponding number of white limited resource farm families. These farm families are an underemployed and under-utilized portion of the rural work force/population in the LMDDC area.

Historically, black farmers/landowners have been forced to sell their land in the face of mounting financial and legal pressures. They have had to rid themselves of accumulated debt; been victimized by unscrupulous attorneys, realtors and land speculators; and have received separate and unequal treatment as a result of the South's land tax, partition sale and foreclosure system. In addition, there is an underextension of program services and resources traditionally offered by the federal government to black landowners. The black landowner is at a distinct disadvantage when it comes to access to capital, markets and government-funded programs.

In the face of these grave and continuing problems, the Federation/LAF has been effective in finding self-help solutions to these problems. With limited resources and support from foundations, church denominations and concerned individuals, the Federation has fashioned some creative responses to these difficult problems of rural community development. Successful efforts of the Federation/ LAF over the past few years include:

- Established a network of volunteer community contacts across the South who can assist landowners with problems of retaining their land. They can contact the Federation/LAF state and regional staff for specialized technical assistance and referrals.
- Conducted several hundred community level workshops and informational sessions to assist farmers and landholders in understanding the methods and programs, including Federal USDA policies and regulations, to help them retain, maintain and develop their landholdings.
- Assisted more than 1,000 family farmers to apply for FmHA loan restructuring under the new programs of the 1987 Agricultural Credit Act.
- Assisted many family farmers and other rural people to organize and sustain cooperatives and credit unions as a means to work collectively to purchase, market and share farming resources; existing cooperatives were aided and new cooperatives were established.
- Continued development of the Federation/LAF Rural Training Center, near Epes, Alabama, as a central resource for cooperative development in the rural South.
- Developed marketing outlets for farmers to market their produce directly to consumers in New Orleans, Memphis, Birmingham, Atlanta, Philadelphia and Chicago, through inner city churches and other community centers.
- Developed plans for processing facilities to further strengthen marketing and distribution of cooperative production. Among these plans are: a meat processing plant, pickle processing plant, wood processing company for pallets and boxes, and other similar projects.

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- Advocated for policy changes at the federal, state and local level which will facilitate the growth and development of family farmers, especially minority farmers and rural communities.

Federation/LAF Recommendations

The Federation/LAF recommends that any comprehensive rural community economic development legislation enacted by Congress contain the following provisions:

1. Legislation for a "Minority Farmers Rights Bill" to protect the landholdings of black and other minority farmers across the nation. The Federation/LAF has developed a draft of this legislation which recognizes the importance and benefit to the nation of racial and ethnic diversity in the ownership of our farm land; and the value of cultural diversity and pluralism in the composition of our family farm population. A major goal of this legislation is to maintain, increase and perpetuate this diversity and pluralism in ownership of our farmlands.

   We are urging Congress to consider adding these provisions as a title of the "1990 Farm Bill" or incorporating them into any rural development legislation that is considered by Congress. Details of this legislative proposal are available from the Federation/LAF and some data on the provisions are appended to this statement.

2. Support is needed for a massive outreach and education effort to serve minority limited resource and family-sized farmers with information to assist them to remain in farming, organize community cooperatives, credit unions and other self-help activities to develop rural communities.

   The Federation/LAF and some of the 1890 Historically Black Land-Grant Colleges have shared in an FmHA/USDA initiative called the "Small Farms Technical Assistance Project." This $1 million per year effort needs to be increased to at least $5 million annually, with funding for the 1890 colleges, but also community-based groups like the Federation/LAF, who are in direct contact with minority and limited resource farmers.

   In Georgia, the Federation/LAF with a $100,000 grant from the "Small Farms Technical Assistance Project" provided hands-on help to more than 600 farm families including organizing three new cooperatives. The Mississippi Association of Co-ops worked with Alcorn on its project, but could have done more in Mississippi with a statewide grant to respond to the needs of all farmers who contacted us for help.

   The LMDDC needs to consider seeking funding for an outreach and education effort to involve and assist limited resource farmers in its service area.

3. Greater support is needed for direct marketing efforts of family farmers and their cooperatives in selling to consumers, inner city groups and other direct markets. With church support, the Federation/LAF sold directly to consumers in several cities; i.e., New Orleans, Birmingham, Atlanta, Memphis, Chicago and Philadelphia. With more funding and support similar to "export enhancement," assistance farmers groups could be supported in marketing directly to consumers.

4. Provide resources and funding for community-based technical assistance and training organizations like the Federation/LAF, to assist family farmers and rural communities to organize, develop, operate and sustain cooperatives, credit unions and community self-help organizations.

5. More loan and equity investment funds, at reasonable interest rates, are needed to support cooperative and community development projects. Capital and development purposes, especially for community-based projects, is in short supply in rural depressed communities. More loan funds--land banks to buy and hold land for family-sized farmers--community development credit union funds and others are needed to assist in financing community self-help projects to improve the lives and livelihoods of rural people and communities.

6. Provide for set aside in any rural development legislation and program creating special rural development loan funds to serve low income, minority-owned and community-based projects. Community-based projects are the most difficult to finance, but often pay the largest dividends.

Ralph Paige is executive director of the Federation of Southern Cooperatives, which was established to address the needs and interests of blacks and other low income people, particularly in rural areas. One of Paige's current projects is the formation of the Land Retention Fund, which is designed to help poor black farmers finance their land and keep them from losing large holdings.

Issues Facing Small Farmers

Luther Davis Jr.

Background

In recent years, much discussion about farm structure has centered around the increased production and growth of larger farms. Technological developments in agriculture have increased the nation's agricultural output, but not without cost. As a result of these developments many workers from agriculture, who are either farmers or employed on farms, have been displaced.

America is currently losing some 30,000 farms annually, although the amount of land in cultivation has not drastically changed. Farms have become larger in size and ownership has become concentrated in fewer hands. The rate of decline in the number of farms has not been uniform throughout the agricultural sector, but rather focused in the small farm category.

Families living on small farms are faced with many perplexing questions and are definitely caught in the middle in deciding which direction to take in the years ahead. A number of questions surrounding the small farm situation need empirical investigation and answers. Some of the important questions are:

- What are those unsurmountable forces causing most of them to get out of agriculture?
- Can the small farmer make a decent living within the rural community?
- How many agricultural resources do they own and manage?
- How much contribution do they make to total agricultural production?
- Should they, and can they, move all or part of the way into non-farm employment?
- How does off-farm employment affect their income and resource utilization?
- What is their attitude and perception of rural life and the future of agriculture?

Answers to these and other related questions are needed in order to understand present and past changes and to guide future developments in the agricultural sector as a strategy in rural development. An important issue concerning small farmers is whether they can make a decent living within rural communities. It has never been proven that small farmers, given adequate incentives, cannot make a decent living from their farms. Consequences of the demise of small farms are not limited to small farms only. It has been shown in several studies that demise of small farms in an area leads to the inevitable decline of the surrounding rural communities.

Net farm income is determined by many factors including input and output, prices, weather, non-farm work by the family and preference for leisure. Physical resources such as land, building, machinery, livestock and operating capital directly influence farm production and income. The skills of the farm labor force and management ability also affect farm income. The small farmer can control only some of these factors.

Small Farm Problems and Needs

Low farm productivity and thus low income are the results of many complex forces impacting upon the small farmer. If help is to be provided to small farmers, it is important to determine major problems they face and their causes. Due to the heterogeneous nature of small farms, farm problems and their solutions are likely to vary. The problems that are generally associated with small farms are discussed here briefly under the following major groups:

- **Availability of Land:** Recent high prices raise serious questions concerning the feasibility of land ownership by those we generally consider to be family farmers. Small farmers can increase their operation by renting agricultural land. Prices of farmland have increased more than 200 percent since 1970, and no one wants to predict what they will be in the future. However, some small farmers may experience difficulty obtaining and keeping rental agreements with landowners who turn over much of their prime land to large operators. In the early 1900s, black farmers owned 15 million acres. In 1989, they owned fewer than three million acres. Close to 50 percent of black-operated farms are smaller than 50 acres with annual sales under $2,500. The average black-operated farm has only about 100 acres, while the average for all farms is 440 acres. If this current trend continues, blacks will be a "landless" people within the next 10 years. Acquiring or retaining agricultural land is one of the most critical problems facing low-income and minority farmers.

- **Lack of Appropriate Technology:** Large commercial farmers have benefitted greatly from agricultural research and development of better techniques. For the most part, new agricultural technology has focused on reducing labor requirements...the one factor that is adequate, if not in surplus, on many small farms. Many small farmers overinvest in equipment because small farm machines are not available. This increases their fixed cost of production. Appropriate technology for small farms should stress the manufacturing of machinery which is easy to maintain and free of unnecessary gadgets. Equipment should be sized according to the small farm labor situation.

- **Financial and Economic Problems:** Small farmers face several capital and land limitations often arising from the general lack of credit. Many lending institutions seek only larger borrowers in order to minimize their service costs per dollar loaned. To obtain a loan, the small producers may have to pay a higher rate of interest. Since most small farmers possess limited information about available sources of credit, they usually do not compare interest charges on other measures of credit's true cost. Only a few lending agencies currently have the ability and the mandate to serve low-equity or beginning farmers.

  Without access to credit, working capital, training and management assistance, low-income and minority farmers cannot hope to develop economically viable farm operations.

- **Lack of Information:** In general, established means of communication have failed to work for low-income farmers. Agricultural extension service has been responsible for disseminating research results and in theory, extension programs are freely available to everyone. However, small farmers do not seek help or use information from the agricultural extension service as readily as other farmers. Extension has claimed to work with the most receptive farmers on the premise that knowledge would "trickle down" to others, but this has not happened. The 1890 Extension Programs are working with those that are left behind through innovative small farm programs.

  Land-grant institutions are structurally and financially the best equipped organizations in this country to explore new ways of helping limited resource farmers, family farmers and rural communities. However, the land-grant system will not realize its potential for constructive and progressive change unless it is convinced to do so by citizens who feel strongly that the resources of the system should be used more equitably and imaginatively. State legislatures and state and local public officials must exercise their power to redirect the efforts of the land-grant system.

- **Government Policies:** Federal programs are often supported by farmers because of the desire for additional farm income through acreage allotments, price supports, etc. However, such government programs frequently have adverse, long-run economic effects on the farm sector, encouraging excessive output and substitution of capital for farm labor, which in turn increases the size and decreases the number of farms. Consequently, government programs developed often have benefitted to a much greater extent those farms that were in the strongest position from the standpoint of assets or volume of production.

  It has been obvious that larger farms accrue more benefits from various government programs and policies since they have more acres and more outputs to sell than small farmers. National agricultural policies are not necessarily applicable to all small farms. Many small farmers benefit very little from commodity programs because income from farm source is only a small part of their total income.

A central theme underlying public policy decisions is enormous heterogeneity in the small farm sector. So far, public policy has not been able to deal with such heterogeneity, and the problem persists partially because there is no single policy designed to carry out the primary benefits of small, low-income farms. This in turn suggests that effective policies and programs may themselves have to vary in important aspects according to the heterogeneity of the problems and geographic locations.

American agriculture today is far too diverse for one type of single-issue policy to meet the needs of all farms. Thus, the policies for small farms should be heterogeneous because the farms have different needs and different objectives. At the very least, public policies for the small farms should be separated from those designed for commercial agriculture.

A variety of institutions can coordinate a leadership role in shaping the direction of small farm operations, but none is more qualified than the land-grant institutions. Particularly the historically black land-grant institutions, with their unique tradition of research, teaching and extension services. These institutions should take new initiative to augment their traditional commitment for identifying the problems of small farms, determining research priorities, allocating research resources, coordinating research efforts, developing realistic and pertinent public policies, and creating an environment more conducive and effective to the survival of small farming operations.

Programs for Small Farmers

Programs to alleviate the situation on small farms flow logically out of the discussion of problems earlier. The characteristics of small farmers also have implications for the kinds of programs that would be meaningful. Following are suggestions for general types of programs that would be helpful to small farms. Keep in mind, however, that the relative usefulness of these programs will vary considerably depending upon the specific type of small farm involved.

- **Credit:** Some of the resource limitations on small farms can be improved with implementation of credit programs specific to the needs of small farms. Access to credit is increased, and credit programs combined with management assistance certainly enhances the opportunity for success.

- **Educational and Management Assistance:** On small farms one or more resources are limited. These resource limitations impose serious restraints upon managerial decisions. In those instances where the small farmer attempts to increase his operation, production and marketing problems pose difficulty for him. There is a role for both extension and research in improving the management capabilities of small farm operators.

An example of such a program is TVA's Agricultural Resource Development Programs. This cooperative effort between the state extension services, the land-grant universities and TVA is designed to assist the small farmers in the Tennessee Valley region in solving problems relating to agricultural production, farm management, farm product marketing and acquisition of farm inputs including capital.

Because of the preponderance of small farms in the Valley, the bulk of TVA's program efforts have been directed toward this segment of agriculture. This experience has shown that many small farmers can produce a level of output sufficient to provide an adequate livelihood in agriculture. This experience has also shown that no one program activity or effort will work successfully with all low income situations. As a result, the cooperative program provides a wide range of activities designed for different audiences depending upon their needs.

- **Marketing:** Availability and access to markets are major problems for small farmers. Programs that allow small farmers to maintain access to markets become particularly important for the traditional commodities. Programs may be designed to develop alternative marketing strategies for specialty crops and enterprises.

- **Rural Development:** Many small farms will continue to depend on off-farm income for an adequate level of living. To focus programs specifically for agriculture and ignore the off farm sector would not be in the best interest of small farmers. The employment opportunities must be increased, keeping in mind the quality of life in the rural area. Small farm families in general are interested in assistance in making the small farm more viable, improving job opportunities, and having a higher quality of life in the community.

Policies and programs should be developed to solve the problems of the small farmers simultaneously with larger problems of rural poverty and unemployment. The programs and policies to help small farmers cannot be separated from programs and policies designed to develop rural areas.

Luther Davis Jr., as regional director of the Agricultural Institute, Tennessee Valley Authority at Muscle Shoals, Alabama, is responsible for the overall management of the Agricultural Resource Development programs, to improve the economic well-being of the agricultural community in his area. He received an M.S. from Tuskegee University.

The Black Farmers' Plight in the Lower Mississippi Delta

Adell Brown
Lionel Williamson

Introduction

Since the 1920s, there has been a steady decline in the number of farms in the United States. The farm population fell from almost 32 million in 1902 to 5.4 million in 1985 (Table 1). The black farm population declined much more drastically than the whites. For example, between 1920 and 1985 there was a 48.3 percent decline in the number of black farmers compared to only 25 percent for the whites.

Most black farmers (98 percent) are located in the south. A large concentration of black farmers are located in five southern states identified as part of the Lower Mississippi Delta (LMD): Louisiana, Mississippi, Arkansas, Tennessee and Kentucky (Table 2). The remaining LMD states, Missouri and Illinois, account for less than two percent of the LMD's black farmers. This paper will focus on the black farmers located within the LMD, and particularly in the targeted 214 counties.

This paper will first describe the socioeconomic characteristics of black farmers. Secondly, the circumstances contributing to the dwindling number of black farmers will be explored. Finally, a set of policies to reverse current trends will be developed.

Socioeconomic Characteristics

Farm Numbers: Based on the 1987 Census of Agriculture, the 7,313 black farms in the LMD constitute less than two percent of the total farm population in the seven states. Approximately 54 percent (3,950) of these farms were found in the 214 counties targeted by the LMD Commission. The number of black farms continued to decrease at an astronomical rate compared to all farms (Table 3). For example, between 1982 to 1987, the number of black farms decreased by 33 percent compared to only a 9.7 percent decrease for all farms. Black farmers were older and controlled fewer farm resources.

Age and Size: The average age of black farmers is 56 years old, compared to 52 years old for all farmers (Table 4). The average black farm ranged from a high of 210 acres in Missouri to a low of 63 acres in Kentucky. The range for all farms was a high of 321 acres in Illinois to a low of 147 acres in Tennessee. In all states except Missouri, all farms controlled more than one-third more land than blacks.

Farm Sales: The majority (75 percent) of black farms had annual gross farm sales of less than $10,000. Therefore, they are classified as small-scale farmers based on the USDA definition (less than $40,000 gross farm sales). The majority of the black farmers reported working off the farm; the degree of off-farm work varied by state. Mississippi reported 81 percent of the black farmers worked off the farm, whereas Louisiana reported 50 percent.

Farming Enterprises: A literature review was done to determine the types of agricultural enterprises black farmers were producing (References 1, 2, 4, 9). The results indicated that they were producing the traditional enterprises grown by the larger farmers. For example, the three primary enterprises produced by black farmers in Louisiana and Mississippi were cotton, soybeans and livestock. In Tennessee, the top three enterprises were cotton, soybeans and tobacco. Similar patterns existed for the remaining states.

In summary, 75 percent of the black farmers have annual gross farm sales of less than $10,000. They are somewhat older, have been farming for more than 15 years and depend on off-farm income to meet family needs. Black owned resources in agricultural production have also exited at an alarming rate, some 33 percent for the last five years. There is a pressing need to determine the reasons for the decline. Afterward, policies and programs can be developed to stop or at least reduce the momentum.

Factors Contributing to the Current Situation

Education: Several studies suggested that black farmers left and are leaving agriculture at a faster rate than whites because of discrimination in the quality and quantity of education received, availability of information and technical assistance, and less stable sources of credit (References 4, 9). Huffman's empirical study concluded that low productivity by black farmers compared to whites was a function of the low level of schooling and extension information received by blacks. Once the cycle of poverty begins, as is the case with blacks, it tends to perpetuate itself.

Capital: Capital is necessary for a farm business to maintain its competitive position. Many studies have indicated that black farmers have been and continue to be plagued by an inadequate source of credit (Reference 9). Major sources of credit such as the Federal Land Bank, Production Credit Association and rural commercial banks did not extend credit to small farmers. Reasons cited were: higher risk faced by these operators, their lower equity positions and the conservative lending practices of these institutions.

FmHA is the main lending institution established to service the credit needs of farmers who did not meet lending criteria of other institutions. Recent studies that focused on FmHA's lending practices conclude that FmHA has been helpful to some small farmers (Reference 8). It has not accomplished all intended because of the difficulty of varying policy objectives among administrators and those able to influence its operations. A report by the United States Commission of Civil Rights concluded that most FmHA's black borrowers did not benefit from loan programs designed for them (Reference 10). FmHA did not advance and, in some cases may have hindered, the efforts of black farmers to remain a viable force in agriculture.

Agricultural Farm Policies: The major components of the agricultural policy have been price and income policies executed through commodity programs. These programs have included supply control through acreage restrictions, allotments, long-term land retirement and marketing quotas, and price supports through direct purchases of commodities and use of non-recourse price support loans.

Past studies have concluded that price and income policies in the short run do not appear to adversely affect small farmers more than larger farmers (References 8, 9, 10). The long run affect of price support programs is price and income stability, which tends to reduce risk and uncertainty, facilitate adoption of new technology and augment bankers' confidence in cash flow projections on farm loan application. The above factors tend to strengthen the competitive position of larger relative to smaller farms. The results were increased purchases of machinery, inputs and land. The results were farm consolidation, expansion of units and reduced farm numbers.

These factors, combined with marginal farm lands, older age and low technology adoption levels produce low gross farm sales and an exodus of blacks from agriculture (References 8, 9).

Policy Recommendations

The final section of this paper is to develop policy options to improve the black farmers' chances of being successful, thus stabilizing the black farm population. New policies are needed in the areas of education, alternative enterprises, agricultural policies and off-farm employment opportunities.

Education: Farm survival is deeply entrenched in the farmer's ability to allocate and combine scarce resources among competing activities. Black farmers, where the majority are small, must constantly balance family resources (land, labor and capital) between farm and off-farm opportunities. Educational programs that increase the farmer's ability to be a good farm manager and secure off-farm employment are needed.

The extension service has the network (county staff) in place to carry out such an effort, given adequate resources. If no action is taken, these families become dependents of the state. They do not have the wherewithal to remain in farming, nor the skills to secure non-farm jobs. Therefore, the federal government has a vested interest to support this effort.

Closely connected to education is the need to improve the flow of both technical and programmatic information to black farmers. Much too often, information about government programs such as FmHA, SCS and others do not filter down to black farmers until the deadlines have past or funds allocated. When the information does reach them, it is communicated above their level of understanding and therefore, is of little use. Current informational channels must be improved to remedy this problem.

Alternative Agricultural Enterprises: Fruits, vegetables, rabbits, goats and other small animals are often suggested as enterprises with high income potential for limited resource black farmers. However, additional research and education is needed on producing and marketing such enterprises. Market barriers continue to prevent many alternative enterprises from reaching their true income potentials.

Black farmers need help to identify those enterprises, and markets where they have a comparative advantage, given their bundle of resources. The land-grant universities, especially black land-grant universities, can play an important role. They can assist these farmers with developing alternative enterprises, and establishing marketing channels and production practices that give them a comparative advantage.

Agricultural Policies: Agricultural policy is needed to stabilize farm income and provide opportunities for existing and potential black farmers to acquire land. The government, through USDA and other agencies, should develop policies to assist these farmers to minimize risk and increase their competitiveness. USDA should evaluate the use of a progressive acreage control program similar to the income tax scale for existing acreage control programs. Thus, compliance by small farmers would require smaller reduction in base allotment than larger farmers.

The aim is to prevent the reduction of farm size to the point of not achieving economies of scale. Other potential methods of guaranteeing a stable farm income using criteria other than volume of production should be evaluated. The 1991 Farm Bill needs to include provisions to minimize risk and guarantee acceptable levels of return for alternative fruit and vegetable farmers. These farmers need the same security that cotton, sugar and grain farmers get through target price programs, etc.

Off-Farm Employment: Multiple job-holding among farm households (off-farm employment) is a common feature of many of the black farmers in the Lower Mississippi Delta region. For these farm operators, off-farm employment provides much needed income and cash flow for the farm and family operation. Because of the advanced age of these farmers, off-farm employment should not be viewed as a temporary, transitional phase, but as an accepted lifestyle. Future rural development programs designed to create jobs must incorporate opportunities for black farmers to productively participate in the labor force. Job training and retraining, as well as incentives to attract or retain industry in the area, are areas that policy should address.

Agricultural Credit: Many black farmers are unable to secure the credit needed to invest in new enterprises which may have potential as well as some risk. Policy to encourage agricultural agencies to provide short-term and long-term credit and technical credit assistance should be seriously considered.

Improved Communications: Information transfer is essential to all farmers as it allows for informed decision making. Most black farmers work off-farm and therefore are not available for meetings held by agricultural agencies at traditional times (normally at night). In addition, many black farmers who are full-time farmers do not attend meetings primarily because they do not feel comfortable being involved with the commercial farmer audience. Programs should be packaged and targeted specifically for this clientele.

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References

1. Brown, A. *Factors Affecting the Success/Nonsuccess of Small Farmers in Louisiana.* Ph.D Dissertation, Louisiana State University, The Department of Agricultural Economics and Agribusiness, December 1983.

2. Brown, M.M. and O.F. Larson. "Successful Black Farmers: Factors in Their Achievement," *Rural Sociology,* 44 (1979), pp. 153-175.

3. Coley, B.G. "An Economic Appraisal of Blacks in Agriculture in North Carolina." *The Research Bulletin Series.* N.C. A&T State University, Greensboro, North Carolina. , Vol. 67 No. 4, 1978.

4. Hwam, Liang. "Small Farm Characteristics and Their Impact of Farm Income in Selected Mississippi Counties." *Mississippi Research Bulletin No. 32.* Alcorn State University, Lorman, 1985.

5. Huffman, W. "Black-White Human Capital Differences: Impact on Agricultural Productivity in the U.S. South." *American Economics Review,* 71(1981) pp. 94-107.

6. Munoz, R. D. "Black Farmers in the Mississippi and Tennessee Sand-Day Hills." *Agricultural Economics Report No. 149,* Mississippi State University, June 1984.

7. Ponder, H. "Prospects for Black Farmers in the Years Ahead." *American Journal of Agricultural Economics*, 53 (1971), pp. 297-301.

8. *Problems and Policy Implications of Black Operated Farms.* Edited By Tesfa G. Ghebremedhin, Center of Small Farm Research, College of Agriculture, Southern University and A&M College, Baton Rouge, LA, May 1986.

9. Spitze, R.G., S. Walter, DeRay and J. West. "Public Agricultural Food Policies and Small Farms." Produced as paper I of the *National Rural Center Small Farms Projects*, 1980.

10. U. S. Commission on Civil Rights. *The Decline of Black Farming in America.* Washington, D.C., February 1982.

11. U. S. Department of Commerce, Bureau of Census 1987, Census of Agriculture.

Notes

The authors express sincere gratitude to Richard Winston, extension specialist, Tennessee; Marion Simon, extension specialist, Kentucky State University; and Liang Hwam, assistant professor, Alcorn State University for their help.

TABLE 1

Total and Farm Population by Race in the U.S. from 1920 to 1987

(000)

	White			Black		
Year	Total Population	Farm Population	Percent of Total	Total Population	Farm Population	Percent of Total
1920	94,821	26,073	27.5	10,463	5,100	48.7
1930	110,287	25,226	22.9	11,891	4,681	39.4
1940	118,215	25,463	21.5	12,866	4,502	35.0
1950	134,942	19,715	14.6	15,042	3,167	21.1
1960	158,832	11,852	7.5	18,872	1,482	7.9
1970	174,641	8,775	5.0	23,972	849	3.5
1978	184,806	6,064	3.3	24,757	349	1.4
1979	186,080	5,891	3.2	25,104	280	1.1
1980	187,633	5,714	3.0	25,502	242	0.9
1981	189,056	5,486	2.9	25,930	222	0.9
1982	193,570	5,391	2.8	26,764	179	0.7
1983	195,423	5,563	2.8	27,208	162	0.6
1984	197,137	5,538	2.8	27,760	148	0.5
1985	198,706	5,195	2.6	28,147	120	0.4
1986	200,505	5,081	2.5	28,546	111	0.4
1987	201,948	4,834	2.4	28,945	123	0.4

Source: U.S. Department of Commerce, Bureau of Census, Farm Population Series P-27, No. 56, November 1983.
U.S. Department of Commerce, Bureau of Census, Farm Population Series P-27, No. 59, July 1986.
U.S. Department of Commerce, Bureau of Census, Farm Population Series P-27, No. 60, November 1987.
U.S. Department of Commerce, Bureau of Census, Farm Population Series P-27, No. 61, June 1988.

TABLE 2

Total Farm Population by Race for the Seven LMD States

State	Total Farm Population	Total Number of Black Farms by State	Total Black Farms in Targeted Counties
Arkansas	48,242	784	560
Illinois	88,786	109	27
Kentucky	92,453	673	89
Louisiana	27,350	769	480
Mississippi	34,074	3,016	2,193
Missouri	106,105	193	62
Tennessee	79,711	1,202	539
TOTAL	**476,721**	**6,746**	**3,950**

Source: U. S. Census of Agriculture 1987

TABLE 3

Comparison of Changes in Farm Numbers

State	All Farms		Percent Change	Blacks		Percent Change
	1987	1982		1987	1982	
Arkansas	48,242	50,525	-4.5	784	1,249	-36.0
Illinois	88,786	98,438	-9.8	115	160	-28.0
Kentucky	92,453	101,642	-9.0	673	935	-28.0
Louisiana	27,350	31,628	-13.5	769	1,220	-37.0
Mississippi	34,074	42,415	-19.6	3,016	4,802	37.1
Missouri	106,105	112,447	-5.6	193	238	18.9
Tennessee	79,711	90,565	-12.0	1,202	1,598	-24.8
TOTAL	**476,721**	**527,660**	**-9.7**	**6,159**	**9,242**	**-33.4**

Source: U. S. Census of Agriculture, 1987.

TABLE 4

Comparison of Average Age and Farm Size by Race

State	Age		Farm Size	
	White	Black	White	Black
Arkansas	51.8	53.2	297.0	173.6
Illinois	50.4	51.7	321.0	151.0
Kentucky	52.2	58.3	151.0	63.4
Louisiana	52.0	57.6	292.8	109.3
Mississippi	53.8	58.9	315.4	117.5
Missouri	52.9	53.8	270.0	210.6
Tennessee	53.8	57.4	147.2	98.0

Source: U. S. Census of Agriculture, 1987.

Roundtable Discussion

Black/Limited Resource Farmers

Adell Brown, Presiding

I. The roundtable discussion began by identifying constraints and venturing recommendations for alleviating these constraints.

Constraints:

- Policies against targeting benefits.
- Perception of the problem by majority groups.
- Requires a second job to make a living.
- Lack of coordinated cooperative production in local communities.
- Lack of capital, difficult to acquire loans for expansion.
- Lack of education and training.
- Lack of information about opportunities (farm and nonfarm)
- Lack of marketing assistance and development.
- Limited government resources and institutional constraints.
- Limited amount of quality land, low productivity.
- Mind-set; psychological, social and mental problems create a negative image of agriculture.
- Lack of appropriate small farm technology.
- Lack of consistency in program delivery from national level all the way down the ladder. The county delivery, many times, is different from the intent at the national level.
- Need for the government and farmers to coordinate better with community-based organizations.
- Age structure.
- Lack of role models for black youths in agriculture.
- Lack of political support (no base).

Recommendations:

- There must be a commitment by federal and state governments to save and improve the economic well-being of black farmers:
  - ▸ A comprehensive rural development bill.
  - ▸ Off-farm employment to supplement farm income.

  Commitment implies new monies. It will be difficult to get the desired results by requiring agencies to shift funds. This approach tends not to filter down the ladder.

- Mandate all USDA agencies to follow existing regulations and implement an affirmative action program.
- Education:
  - To include formal education for black youths and adults.
  - Increase funding and better coordination among extension programs, especially 1890 colleges directed at providing black farmers with formal production and management training. Additional technical assistance through 1890s and grass root organizations. Increased funding should emphasize a federal/state partnership (matching funds).
- Encourage participation by local grass root organizations. Many of these organizations have demonstrated an ability to reach black farmers with information, etc. Leadership programs at the local level should be implemented to training farmers and rural residents. *Leadership* is aimed to change the mind-set of all parties.
- Increase the availability of capital (venture, operating, etc.) for black farmers to expand and/or implement alternative enterprises that provide some comparative advantages. Set-aside and target programs for black farmers/small farmers is one approach that should be considered.
- USDA/state agencies should implement award systems for employers working with black and small farmers.
- Commodity support programs for alternative enterprises to help minimize risk.

Marketing Strategies to Enhance the Economic Development of the Lower Mississippi River Delta

Bob Odom

It is a pleasure for me to participate in "The Role of Agriculture" conference sponsored by the Lower Mississippi Delta Development Commission. The Delta area, with the exception of a few metropolitan areas such as Baton Rouge, Memphis and New Orleans, is predominately a rural area with agriculture as its economic basis. Therefore, any logical plan for improving the economic well-being of the citizens of this area must be centered around agriculture, forestry or other enterprises that are suited to a rural environment.

There are agriculture opportunities available that would improve the social, economic and environmental conditions for the people of the region. The potential for expanded agricultural activities exist, but will require some support from the federal government. The educational level and skills of the rural population are adequate to supply the work force for a wide range of agricultural related industries.

The basic commodity crops produced in the Delta are rice, cotton, soybeans and corn. Funds should be made available to the states to determine the feasibility of establishing facilities to further process these products. The Mississippi River provides an excellent transportation system for moving finished products to other regions of the U.S. and into foreign markets.

In addition to continuing to expand our basic commodity crop production, efforts should be made also to expand aquaculture, and the production and processing of vegetables and forest products in the Delta region. A complete evaluation of the potential for expanding these industries is essential before investors can commit to funding such an expansion.

Diversifying Agriculture

The Delta is blessed with an abundance of natural resources. Opportunities are nearly unlimited in this area as it is well suited to agricultural production. We need to work to develop a diversified agriculture for the 21st century. In doing so, the region, with its highly productive soils, mild climate and abundant supply of fresh water, can be turned into an economic wonder. Additional financial and technical resources, however, are needed for the area to reach its full potential.

Further development of agriculture has the greatest potential for providing economic growth in this region. We need to maintain farm profitability for crops currently being produced in the Delta. We need to ensure the long-term growth of agriculture, including future development of the international market, and encourage the processing of agricultural products produced in this region. We also need to initiate studies and projects to determine the suitability of specialty crops and marketing strategies.

There is a large work force in the region that is not fully employed. No major retraining would be required to move this agricultural-oriented work force into new and diversified agricultural enterprises.

Aquaculture

The Lower Mississippi Valley is a natural for the development of aquaculture. Potential edible seafoods include crawfish, catfish, trout, hybrid striped bass, alligator, shrimp and mollusks. Aquaculture is one of the nation's fastest growing agriculture sectors, bolstered in recent years by expansion of the catfish and crawfish industries. At this time, these two crops appear to have the greatest potential for growth.

Over the past 10 years, the amount of catfish grown has increased an average of 25 percent per year. The growth of aquaculture appears to be unlimited. Soft-shell crawfish, striped bass, prawn and redfish have a great market potential, but will require further development of production technology. Alligator farms and production levels are increasing in Louisiana and other Southern states. There is a need to develop a farming industry in conjunction with alligator production in this region.

Secondary industries involve specialized feed processing and equipment manufacturing, supply outlets, technical services, product processing, marketing and distribution. Aquaculture is a large consumer of feed grains that can be grown locally. U.S. exports of fishery products increased from $1 billion in 1987 to $2 billion in 1988. At present, the export market for aquaculture crops is small compared to the domestic market. To increase export opportunities we need a more dependable supply. To achieve more dependable supplies we need to reduce the initial risk to investors.

Aquaculture can produce highly desirable products for the marketplace throughout the year. With growing problems of water pollution and unpredictable or limited yields from the commercial fishing industry, aquaculture is a good economic activity for many areas of the Lower Mississippi River Delta (LMRD).

The U.S. Army Corps of Engineers' recent unwarranted expanded jurisdiction into farm lands is a serious threat to the expansion of the aquaculture industry throughout the Delta. Another limiting factor in the development of the agriculture industry is the high capital investment that aquaculture requires. This seems to be the area where government can play a key role. At present there are no government assistance insurance programs, so it is a relatively high risk industry. To develop the industry to its full potential, programs must be devised to reduce the risk to both the individual investor and to financial institutions willing to participate with venture capital.

From a marketing stand point for aquaculture, the following points should be considered:

1. Financial and technical assistance should be made available to study foreign market needs for fresh, frozen and high-value processed seafood products currently being produced in the region. This study should determine if cultured seafood production can be used to supply these markets and if new products can be produced in the region.
2. Financial and technical assistance should be made available to organize and conduct trade missions to targeted markets.
3. Favorable export credit terms should be made available to exporters/importers.
4. As traditional seafood species become less plentiful and aquaculture produced seafood is substituted, the consumer must be educated to ensure acceptance of the cultured product. Market development funds should be made available for consumer education, advertising and promotion.
5. When mandatory seafood inspection becomes a reality, financial assistance may be necessary for companies which need extensive renovations.

Two aquaculture species that have been successful in Louisiana and may have potential in other parts of the Delta are crawfish and alligators. Following are specific items to consider when evaluating the development of crawfish and alligator markets:

1. Crawfish/Softshell Crawfish
   a. Growth on this market has been inhibited by the lack of consumer awareness and by the negative cultural bias that exists outside the traditional crawfish consuming area.
   b. A nationwide promotional campaign is needed to educate the consuming public of the availability and desirability of crawfish.
2. Alligators
   a. Alligator hide tanning facilities need to be developed in the region.
   b. Further research in alligator production must be pursued.

The increased national consumption of aquaculture products makes processing a potential economic development opportunity for the Delta. More than 70 percent of all seafood products consumed in this country are imported, so there is enormous potential for a domestic market. This is a labor intensive industry that does not require a highly skilled work force. Therefore, no excessive education or training program would be required to mobilize a work force to expand this industry.

Aquaculture enterprises are not well known or understood by the financial industry. Investors need to be educated so that they are willing to invest in the development of this industry. Also, a mandatory seafood inspection program should be implemented to increase consumer confidence in the wholesomeness of the nations seafood supply. Many older seafood processing facilities would require extensive renovation to be in compliance with any new inspection program. Training for plant managers and other high level personnel will be required and the industry will need financial and technical assistance to meet new standards mandated by the inspection program.

Commercial Vegetable Production

Commercial vegetable production has the potential for significant expansion in the Lower Mississippi Valley, for both the fresh and processed market. The consumption of fresh vegetables has risen dramatically in recent years as a result of Americans becoming more nutrition conscious. The long-term trend shows no signs of weakening. The production of vegetables are one of the most diverse, least subsidized, and financially successful components of U.S. agriculture. In terms of processing, wholesaling, transporting and retailing, the vegetable industry stimulates economic activity throughout the rest of the U.S. economy.

More than 50 different vegetable crops can be grown in the Delta. Much of the region has well drained soil, water for irrigation and suitable climatic conditions required for vegetable production. Many crops can be grown in greenhouses commercially. Greenhouse vegetables may be grown on a modest scale with minimal structures and soil substrate, or grown more intensively in synthetic media or hydroponics.

The best opportunity for greenhouse vegetable sales is during the cold season, from September to June. Dual cropping, such as growing tomatoes in the spring and poinsettias in the fall, is possible. Raising mushrooms for the fresh market, and secondary market in the form of canned mushrooms, soups and sauces, also has considerable potential. Some types of mushrooms can be grown both outdoors and indoors as a small farm enterprise. The needed work force would require no additional training to work in both field or greenhouse production of vegetables, and using farm labor in greenhouses during the off season could provide year-round work. The cost of energy is a major concern of greenhouse vegetable production, as are the skills needed for greenhouse management.

The growth of fresh vegetable production in the Delta has been retarded by the absence of a network to broker production throughout the country. Local producers have been limited to marketing their production directly to local consumers and retailers. In many cases, these local markets have both quantity and quality constraints which have made large scale production impractical.

There has not been sufficient product growth in the region for a brokerage network to develop naturally. Therefore, a vegetable brokerage network should be established and subsidized until such time as it can survive on its own. This must include not only building the facilities, but also supplying operating capital.

Growth of the fresh produce industry in Louisiana has been constrained by the lack of harvest labor. A sufficient itinerant labor pool is not available to Delta producers primarily due to federal regulations regarding housing. Clean, safe, affordable housing facilities might be built and leased back to producers at rates that would encourage the use of this labor group. As acreages increase, the number of permanent employees will also increase, on farms as well as in the associated processing industries.

Many areas of the LMRD are as close to major U.S. population centers as are Florida, California and Texas. California currently produces 60 percent of the fresh market vegetables. A distant second and third are Florida and Texas. Unlike these major vegetable producing states, LMRD has an abundant supply of fresh water. Favorable locations to major cities would provide a freight advantage to Delta growers. In addition, the LMRD is an excellent location from which to distribute vegetables to regional and export markets.

Forest Products

The primary forest product industry is one of the largest manufacturing employers in the South. The expansion of the hardwood industry by reforestation, coupled with proper timber management, offers a tremendous opportunity for the LMRD.

The secondary wood processing sector is comparatively small in Louisiana, employing only 5,500 people. By contrast, Mississippi has furniture enterprises that employ 25,000 people and is expanding. The economic impact is, of course, much greater in the secondary sector than in the primary. The LMRD can support an expanded forest service industry.

There is considerable room for expanding timber production and processing sectors, and we have ideal conditions for production of important species of both hard and soft woods.

These are also opportunities to expand considerably our ability to distribute forest products to foreign and domestic markets. To accomplish this, further development of our already extensive water transportation system is required. Additional port facilities are needed on the Mississippi River and its tributaries, and existing facilities need upgrading to efficiently handle forest products and raw timber.

Fishing, hunting and related outdoor recreation are marketable commodities and can give landowners increased incentives for investing in better management and marketing of their forested land. Better care of land resources is significant in Louisiana, where 91 percent of all forested acreage is privately owned. Hunting, fishing and other recreational activities can be very compatible with woodland production.

The Delta has a vast array of woodlands that can be managed for both timber production and wildlife habitat. To maximize socioeconomic values such as aesthetics, wildlife populations, improved soil, air and water quality, our forests must receive more intensive management. Many acres in the Delta referred to as farmed wetlands must be reforested with direct assistance through the existing USDA Conservation Reserve Program, including long-term agreements to keep these lands forested. These reforested private lands should provide an economic return to the land owner or manager.

Export/Import Financing

Another possibility is to develop a banking facility to be involved in trade financing. This bank could finance the sale of Delta products based on the merits of each specific transaction (contracts, letters of credit, etc.) rather than the equity base of the principles. This would increase dramatically the amount of business a firm could conduct simultaneously, which to date has been restricted to the size of that potential exporter's equity or net worth.

The ports of Baton Rouge, Memphis and New Orleans are the natural outlets for all areas of the Lower Mississippi River Valley. Each of the areas of the Lower Mississippi Valley has the potential of developing or expanding their port facilities to enhance export of products and to serve as a river development for tourism. A major role of the federal government should be to provide a source of export capital to develop this potential.

Federal resources are needed in LMRD to support a financial mechanism that provides the state a way to use the Export-Import Bank's City State Program. The Louisiana Office of International Trade, Investment and Finance of the Louisiana Department of Economic Development, the Import-Export Trust Authority, and the Louisiana Department of Agriculture and Forestry are the agencies in Louisiana that would utilize this mechanism. Other states probably have similar programs.

The City-State Program is a new effort by the Export-Import Bank to bring its services to small and mid-size exporters. This proposed consolidated effort would help exporters ship to the world market through the major ports of New Orleans, Memphis and Baton Rouge.

Conclusion

To make a significant improvement in the social, economic and environmental conditions in the LMRD, there must be a change in the utilization of the region's resources. If new economic opportunities are not provided to the citizens of the region, they will move into the 21st century with further depressed economies. Social as well as environmental conditions will continue to deteriorate without a change in the region's economy.

To maximize the economic potential of the region's renewable resources, it will be necessary to put together a comprehensive economic data base for each of the states. The data base should include current socioeconomic conditions, available natural and human resources, quantity and quality of natural resources, educational and training needs, available government assistance programs, farm support facilities and other ancillary data for the region.

Agriculture alternatives and other enterprise such as the retirement industry, recreation and tourism, home-based industries and expanded shipping facilities should also be evaluated as they offer a real opportunity to lead the LMRD into the '90s.

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Marketing Alternative Crops

Magid A. Dagher

INTRODUCTION

The purpose of this paper is to discuss opportunities for marketing alternative crops, specifically small fruits and vegetables, in the Lower Mississippi Delta region.

In recent years, the push for diversification in alternative crops has received much attention. Alternative crops consist of new and improved varieties of the traditional cash crops and non-traditional cash crops such as fruits and vegetables, herbs and spices, and ornamentals. There is a prevailing perception among economic analysts that alternative crops will improve substantially the agricultural economy of depressed farming communities in the South. Table 1 indicates the trend in per capita consumption of some popular vegetables. Demand has grown substantially over the period.

Small fruits and vegetables are often mentioned as a more economically viable alternative enterprise to traditional crops. While not the largest contributor to the South's agricultural economy, fruit and vegetable production is important (Collette and Wall, 1978; Musick, 1988). The success enjoyed by fruit and vegetable farmers in major producing states such as California, Florida, Texas and Arizona, has generated much discussion on whether or not other regions, including the Delta, should produce alternative crops commercially. Several studies support the adoption of alternative crops (Capps, 1986; Babb and Long, 1987; Alternative Crops Symposium, 1985). Table 2 gives the leading vegetable producing states.

Limited resource farmers (LRFs) especially are urged to diversify into alternative crops since they suffer most from adverse price fluctuations and low net returns from production of traditional crops. A prerequisite for production of alternative crops should be a sound understanding of the marketing system and opportunities, along with the development of a viable marketing plan.

THE ROLE OF MARKETING IN AGRICULTURE

Agricultural marketing is the process of moving farm products from initial points of production to the ultimate consumption points. It involves assembly, transportation, storage, processing, wholesaling, retailing and coordination of the terms of trade at all steps in the system. Figure 1 presents a diagram of the marketing system for alternative crops.

Marketing is important to the producer since it is assumed that the farmer is a businessman who invests resources in order to earn a fair return on his capital outlay. Marketing is complex, involves costs and is essential to any firm or industry. The marketing bill accounts for approximately $0.75 of every dollar of final sale that is generated in the agricultural sector.

Most farmers invest more time, energy and resources into production than marketing. They usually do not have a well developed marketing plan or strategy, which results in a less than optimal performance. Middlemen have developed the expertise and taken the leadership in the marketing system. They skim the net margins that are associated with performing the marketing tasks.

Marketing is also essential to consumers and society. It adds time, place, form and possession utilities to products desired by consumers. Time utility is the satisfaction that is derived from storage;

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place utility, the benefits from transportation; form utility, the convenience of value-added through processing; and possession utility, the satisfaction that comes with ownership.

The place of marketing in agribusiness cannot be overemphasized. A well developed marketing system that operates efficiently is preferred to one that falls short of this prototype. Understanding the market and marketing process, and having a viable marketing plan are essential to the long-run success of firms in an industry.

MARKETING CONSTRAINTS

The small fruit and vegetable farmer faces a number of constraints in the marketing system. The constraints may be grouped into four categories: 1) physical constraints, 2) institutional constraints, 3) coordination constraints and 4) policy constraints.

Physical constraints include problems with storage, transportation, refrigeration, processing, seasonality, perishability, weather, volume and quality. Physical facilities, equipment and their operation require substantial capital investment. Limited resource farmers lack the equity and debt capital necessary to provide the physical support system for economically efficient storage and handling of commodities as they move through the system. In addition, LRFs do not have the commodity volume to justify the investment in efficient physical facilities.

The major buyers would rather do business with well established, large-scale producers who can provide the volume, quality, packaging and reliability of supply during the marketing year. Furthermore, the Delta region does not have the processing facilities and infrastructure that would provide major demand points to stimulate more production of small fruits and vegetables. It is well documented that strong demand, which raises price, stimulates expansion in supply.

Institutional constraints are the inhibiting factors that affect the relationship between LRFs and the various agents and organizations that are a vital part of the marketing system. More specifically, the agents and organizations include the brokers, commission agents, processors, wholesalers, retailers, speculative middlemen and facilitative organizations (trade organizations, fruit and vegetable auctions, and government). LRFs find it difficult in most instances to establish and maintain good business relationships with the middlemen of the marketing system and facilitative organizations. LRF's small volume, periodic supply position, lack of knowledge of the intricacies of institutional arrangements, and limited resources have relegated them to a disadvantageous position. They are not accepted as equal partners and do not derive the benefits that accrue to the more sophisticated middlemen.

Furthermore, facilitative organizations tend to promote activities that benefit the larger, more influential and more supportive firms. They find it easier and more lucrative to allocate their time and energies on this basis. Influencing trade association and other advocacy groups to lobby for better opportunities for LRFs is a major challenge for LRFs.

Coordination constraints involve problems with communication, management expertise, bargaining, financing and reconciliation on terms of trade. LRFs typically sell their produce along roadside, at farmers markets and via pick-your-own. They usually do not have the volume and are not interested in selling to the major buyers. Their management expertise, communication network, bargaining position and financial ability are not strong enough to command the premium prices and other favorable terms of trade enjoyed by other middlemen.

Although LRFs have the option to consolidate their marketing efforts by forming a cooperative, trading company or hiring appropriate middlemen, there is a tendency to shy away from group action. Group action entails the individual's giving up some control of his marketing activities, which most LRFs are reluctant to do.

Several attempts have been made to establish marketing cooperatives. A few have succeeded, but many have failed. The failures can be attributed primarily to a lack of commitment to input the time, effort and other resources required for success.

Policy constraints are more evident in the lack of appropriate policies to facilitate the marketing of alternative crops than in the existing legislation. Very few pieces of marketing legislation have been enacted to facilitate a smooth produce marketing system. The major ones are the Perishable Agricultural Commodities Act[1], and the Agricultural Marketing Act[2].

LRFs producing small fruits and vegetables could benefit from additional facilitative legislation that would address such issues as credit, crop insurance and disaster payments. Small fruits and vegetables are not currently covered under such government pro-

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grams. The lack of policies has contributed to the slow rate of adoption and production of alternative crops and, hence, the small volumes and subsequent marketing problems. Small fruit and vegetable farmers have difficulty obtaining adequate debt capital for a viable marketing program. In addition, they have serious problems obtaining crop insurance or disaster payments.

A recent survey that was conducted in connection with a research project on alternative crop production and marketing, sponsored by the Lower Mississippi Delta Development Commission, produced a number of specific constraints that were discussed in general terms earlier. Table 3 lists these constraints and their relative magnitudes.

MARKETING ALTERNATIVES AND OPPORTUNITIES

Marketing alternatives are the channels through which products flow from the farm to the various demand points. Marketing alternatives may be subdivided into two levels: wholesale level and retail level.

Wholesale Level

Wholesaling involves selling large quantities at discount prices to major buyers such as chain stores, retailers and processors. To engage in wholesale trade, farmers must have the volume, quality and reliability that are a requisite for sustained successful marketing. The average LRF produced volume is not large enough to engage in viable wholesaling. Hence, he is limited to retailing.

In spite of the individual grower's small produce volume, LRFs can become involved in wholesaling by working together and becoming more aggressive and innovative. Wholesale market alternatives for LRFs include: 1) pooling, 2) contract production, 3) store-door sales and 4) cooperative marketing.

Pooling offers an opportunity for the small farmers to amass a commodity volume large enough to interest wholesalers, brokers and processors. Pooling enables farmers to achieve standardization in quality and packaging. The typical fruit and vegetable wholesaler generally desires a large volume from a single reliable supplier over the long haul. In addition, they want a consistently high quality at the lowest price possible and prefer to purchase from sources that have a reputation for quality and service.

Pooling then offers small farmers an opportunity to compete for the business of traditional wholesalers or brokers. In spite of the advantages offered small farmers through pooling many of them are unwilling to relinquish their independence. The foregoing has contributed to slow commercial development of the small fruit and vegetable industry in the Delta.

Contract production offers the LRF a guaranteed market for his produce. Small farmers can gain access to contract markets for processing vegetables that must be hand-harvested--i.e., pepper, cucumbers, green beans and okra. Contract production enables both the farmer and buyer to specify product characteristics, time and place delivery, and the price. The grower is able to lock in a price and shield himself from price volatility.

Store-door sales involves selling produce directly to retail stores. The grower grades the produce, delivers it to the store (usually on a daily basis or as needed during the growing season), and receives a price that is usually based on the wholesale market quotation. This approach requires both transportation and additional time that are not required for pooling and contract sales.

Cooperative marketing involves the sale of pooled produce through a cooperative marketing staff. A cooperative is a "business that is voluntarily organized, operating at cost, which is owned, capitalized and controlled by member-patrons as users, sharing risks and benefits proportional to their participation" (Roy, 1981). Marketing cooperatives can access wholesale markets that the individual grower cannot. Furthermore, a marketing cooperative has membership backing, more resources, large volumes, a sizeable share of the produce supply, bargaining power and marketing expertise.

Retail Level

At the retail level, farmers sell produce directly to consumers via the following channels: roadside, pick-your-own, farmers market and tailgating. Table 4 provides the information on direct marketing in a sample of states.

Roadside markets may assume different forms. Some have little or no physical facility and serve as an avenue for moving seasonal products. Others have reasonably good facilities and are functional year-round with the owner-operator supplementing his production with purchased products for resale. Location, customer relations, product quality and pricing are important factors that impact the level of success of this type of marketing.

Pick-your-own (PYO) marketing offers some conveniences to both producer and consumer. The producer saves time and labor while the consumer picks the product that is most desirable. The price is usually reasonable, reflecting an adjustment for the consumer's labor involved in harvesting the commodity. Surveys and observations indicate that popular crops for PYO include small fruits (blueberries, blackberries, raspberries and strawberries); tree fruits (apples, cherries and peaches); and vegetables (peas, snap beans, sweet corn and tomatoes). Akin to PYO is "cut-your-own" which is associated with Christmas trees.

Farmers market offers local producers a central location to bring their produce and interact directly with consumers in the transfer of commodity for cash. A farmers market is usually well known to the community and appeals to a number of consumers who desire a variety of fresh produce at reasonable prices. The market is usually already developed and farmers do not have to worry about whether or not they will have buyers.

Most farmers who sell their produce at farmers markets cultivate small vegetable acreages, are full-time farmers, elder, and rely significantly on this market outlet for trading their products. A survey conducted during the summer of 1989 at the Pine Bluff, Arkansas farmers market revealed that approximately 70 percent of all sales of fresh produce by small-scale farmers occurred at farmers markets (Rogers and Dagher, 1989).

Tailgating is a type of direct retail marketing. The farmer usually parks on a busy street and sells from the back of his truck, or may drive through neighborhoods to sell door to door. This method of marketing requires no fees except local license, where applicable. Although time consuming, the farmer can easily switch his marketing effort from a slow location to a more vibrant area. A drawback is regulations instituted to restrict peddling, and enforcement of parking regulations to facilitate traffic flow.

MARKETING STRATEGIES

The small-scale fruit and vegetable farmers find themselves in an industry that presents unusual challenges at the commercial level in local, regional, national and international markets. Several factors influence the smooth marketing of alternative crops, ranging from basic grading, packing and transportation to demand, supply and price levels.

In light of the above, it is essential for LRFs to consider alternative marketing approaches that have the potential to improve significantly their market performance. Alternative marketing strategies may be condensed into two categories: individual and group.

Individual Strategies

Besides the conventional marketing channels (farmers market, roadside, PYO and tailgating), LRFs have limited options available for marketing their produce. However, they are urged to consider expanding their individual marketing efforts to include more contractual and other arrangements with brokers, food retail stores and institutional food services. Relatively small and fledgling brokers may do business with LRFs and treat their different volumes as a pooled commodity base, as they negotiate terms of trade with buyers.

Group Strategies

In addition to the wholesale marketing channels (pooling, contract production, store-door sales and cooperatives), LRFs may resort to the establishment of bargaining associations, use of agent middlemen such as commission agents and brokers, advertising and vertical integration. Any group action may take the form of a cooperative corporation as the basic business structure. Advantages of group action are to generate large produce volumes; impose quality control; improve storage, handling and transportation; obtain the services of professional marketers and analysts; strengthen their bargaining position; establish themselves as reliable suppliers; and command better prices.

Bargaining associations influence producer terms of trade by engaging in contractual negotiations with buyers. Farmer bargaining associations may be compared to collective bargaining arrangements between labor unions and management. There are numerous fruit and vegetable bargaining associations in the U.S., especially in the major producing states of California, Florida and Texas.

Agent middlemen act as representatives of their clients. They do not own the products they handle, but derive their incomes from fees and commissions. Their services are often retained by a buyer or seller of commodities who feel that he does not have the knowledge or opportunity to bargain effectively for himself. Delta Fresh Inc., located in Jonesboro, Arkansas, provides brokerage service to fruit and vegetable farmers in eastern Arkansas.

Advertising, along with product differentiation, provides opportunities for market expansion. However, because of the homogeneous nature of most raw agricultural products, effective advertising by any one group of farmers is a major challenge. Advertising tends to be generic and other farmers (non-group members) also derive some benefit free of charge. However, advertising (along with branding) can be effective. For example, the brand name "Delta Fresh" could be used to identify Delta region fresh produce and may appeal to consumers in the region.

Finally, vertical integration offers opportunities for expanding markets and marketing activities. Vertical integration occurs when a firm combines several activities that are related. The LRFs realistic chances for successful integration lies in group action, since the resource requirements for this marketing strategy is substantial. An integrated operation enables producers to exercise greater control of commodities as they move through the marketing system. Properly managed, integrated operations tend to improve the profit position of producers. Again, pooling of their resources will be essential if this strategy is adopted.

SUMMARY AND CONCLUSIONS

This paper attempted to introduce the concept of alternative crops, present an argument for diversification into alternative crops, state the role of marketing in agriculture, identify and discuss marketing constraints, discuss marketing alternatives and opportunities, and present marketing strategies.

Alternative crops include small fruits and vegetables, herbs and spices, and ornamentals. Farmers are urged to consider alternative crop production as a viable additional or alternative enterprise. The marketing system is important to any enterprise and, thus, occupies a prominent place in agriculture.

Four categories of marketing constraints were identified and discussed: 1) physical, 2) institutional, 3) coordination and 4) policy. Marketing alternatives and opportunities available to limited resource farmers include 1) pooling, 2) contract production, 3) store-door sales, 4) cooperative marketing, 5) roadside, 6) pick-your-own, 7) farmers market and 8) tailgating.

Additional marketing strategies recommended to limited resource farmers and requiring group action are various contractual arrangements, bargaining associations, agent middlemen, advertising and branding, and vertical integration.

In conclusion, the study found that alternative crops offer limited resource farmers a reasonably good option to the traditional enterprise mix, and the marketing of these crops involves a number of diverse channels. Growers should acquire knowledge of the various marketing channels and arrangements, and then proceed to employ the strategies that best achieve their objectives.

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References

Babb, E. M. and B. F. Long. "The Role of Alternative Agricultural Enterprises in a Changing Agricultural Economy." *Southern Journal of Agricultural Economics*, July 1987, 19(1):7-15.

Capps, Oral Jr. "Changes in Domestic Demand for Food: Impacts on Southern Agriculture," *Southern Journal of Agricultural Economics*, July 1986, 18(1):25-36.

Collette, W. Arden and G. Brian Wall. "Evaluating Vegetable Production for Market Windows as an Alternative for Limited Resource Farmers." *Southern Journal of Agricultural Economics*, December 1978, 10(2):189-93.

Kohls, Richard L. and Joseph N. Uhl. *Marketing of Agricultural Products*, 7th edition. New York: MacMillan Publishing Company, 1990.

Musick, Gerald J. "For Your Information." *Arkansas Farm Research*, May/June 1988, p. 2.

Nonnecke, Ib Libner. *Vegetable Production*, New York: Van Nostrand Reinhold, 1989.

Pierce, Lincoln C. *Vegetable: Characteristics, Production, and Marketing*. New York: John Wiley and Sons, 1987.

Rogers, Freta and Magid A. Dagher. "Marketing Channels for Small Fruits and Vegetables in Southeast Arkansas," USDA-Apprenticeship Program Seminar, University of Arkansas at Pine Bluff, Summer 1989.

Roy, Ewell P. *Cooperatives: Principles and Management*, Fourth Edition. Danville: The Interstate Printers and Publishers Inc., 1981.

National Fertilizer Development Center, Tennessee Valley Authority. *Marketing Alternatives for Small Farmers: Fruits and Vegetables*. Muscle Shoals: Tennessee Valley Authority, 1979.

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1. This Act (1930) was designed to encourage fair trade and prevent fraud in interstate or foreign commerce and applies to brokers, commission agents and dealers.

2. This Act (1937) authorized voluntary control (marketing agreements) and regulatory control (marketing order). In either case, a program would be established only after a formal request and vote by growers affected.

Table 1. U.S. per capita consumption of fresh vegetables and melons, farm weight in pounds, 1970 to 1983.													
											Melons		Total
Year	Asparagus	Snap bean	Broccoli	Cabbage	Carrot	Sweet corn	Cucumber	Lettuce[a]	Green pepper	Onion	Watermelon	Cantaloupe	Vegetables
1970	0.5	1.7	.5	8.8	5.9	7.9	3.2	23.1	2.4	12.2	14.4	8.8	122.3
1971	0.4	1.6	.7	9.2	6.1	7.5	3.1	23.1	2.5	9.8	14.1	8.5	118.1
1972	0.5	1.6	.7	8.8	6.5	7.8	3.3	23.2	2.7	9.8	13.1	8.7	118.6
1973	0.4	1.5	.8	8.9	6.7	8.0	3.0	23.7	2.8	9.2	13.7	7.9	119.1
1974	0.4	1.5	.8	9.1	6.9	7.6	3.4	24.2	3.0	10.5	11.8	7.0	118.0
1975	0.4	1.5	1.0	9.1	6.4	7.8	3.1	24.2	3.1	9.5	12.1	6.8	116.9
1976	0.4	1.6	1.1	8.8	6.4	8.1	3.6	24.9	2.8	10.0	13.3	6.9	121.0
1977	0.4	1.5	1.2	5.5	5.0	7.7	3.9	26.4	3.4	10.0	13.6	7.5	122.9
1978	0.3	1.4	1.3	8.9	5.9	7.5	4.2	26.2	3.4	10.3	12.8	9.0	125.7
1979	0.3	1.4	1.5	8.5	5.8	7.3	4.3	26.6	3.6	11.2	12.3	8.4	127.0
1980	0.3	1.4	1.8	9.0	6.3	7.2	4.3	27.4	3.6	9.9	11.4	7.2	126.6
1981	0.3	1.4	2.1	8.6	6.5	6.8	4.4	26.2	3.5	9.8	12.3	8.5	125.7
1982	--[b]	--[b]	2.2	--[b]	7.4	6.8	--[b]	25.3	--[b]	11.4	--[c]	--[c]	131.8

Source: Produce Marketing Almanac (1985).

[a] Data not available in 1982.

[b] Reported as miscellaneous vegetables starting in 1982.

[c] Including escarole until 1982; in 1982, lettuce only.

Table 2. Leading Vegetable Producing States for Twenty-Four Crops (in numbers of crops)

State	Principal Producer	Secondary Producer	Teritary Producer
California[a]	13	5	3[c]
Florida[b]	8	1	2
Texas	1	6	2
Arizona	0	3	1
North Carolina	1	0	0
Idaho	1[c]	0	0
Arizona	0	3	1
New Jersey	0	2	1
Washington	0	2[c]	0
New York	0	1	2
Michigan	0	0	4
Ohio	0	0	2
Louisiana	0	0	1
Alabama	0	0	1

Source: Adapted from Lorenz and Maynard (1980).

[a] California is the principal producer of artichoke, broccoli, brussels sprout, garlic.

[b] Florida followed by New Jersey are the principal producers of eggplant.

[c] Potato

Table 3. Constraints in the Production and Marketing of Alternative Crops* (in order of significance)	
DELTA REGION	
CONSTRAINT	WEIGHTED (% OF RESPONSE)
Inadequate Labor & Management	49 = 72%
Lack of Finance	44 = 65%
Inadequate Market	41 = 60%
Technology (Pest Control Problem)	32 = 47%
Soil and Weather Conditions	30 = 44%
Lack of Adequate Storage Facilities	17 = 25%
Lack of Processing Facilities	16 = 24%
Low Volume Products	16 = 24%
Lack of Proper Alternative Crops	14 = 21%

* Results from survey for Lower Mississippi Delta Development Commission's sponsored research project entitled "Alternative Crop Production and Marketing Strategies for Farmers in the Lower Mississippi Delta Region."

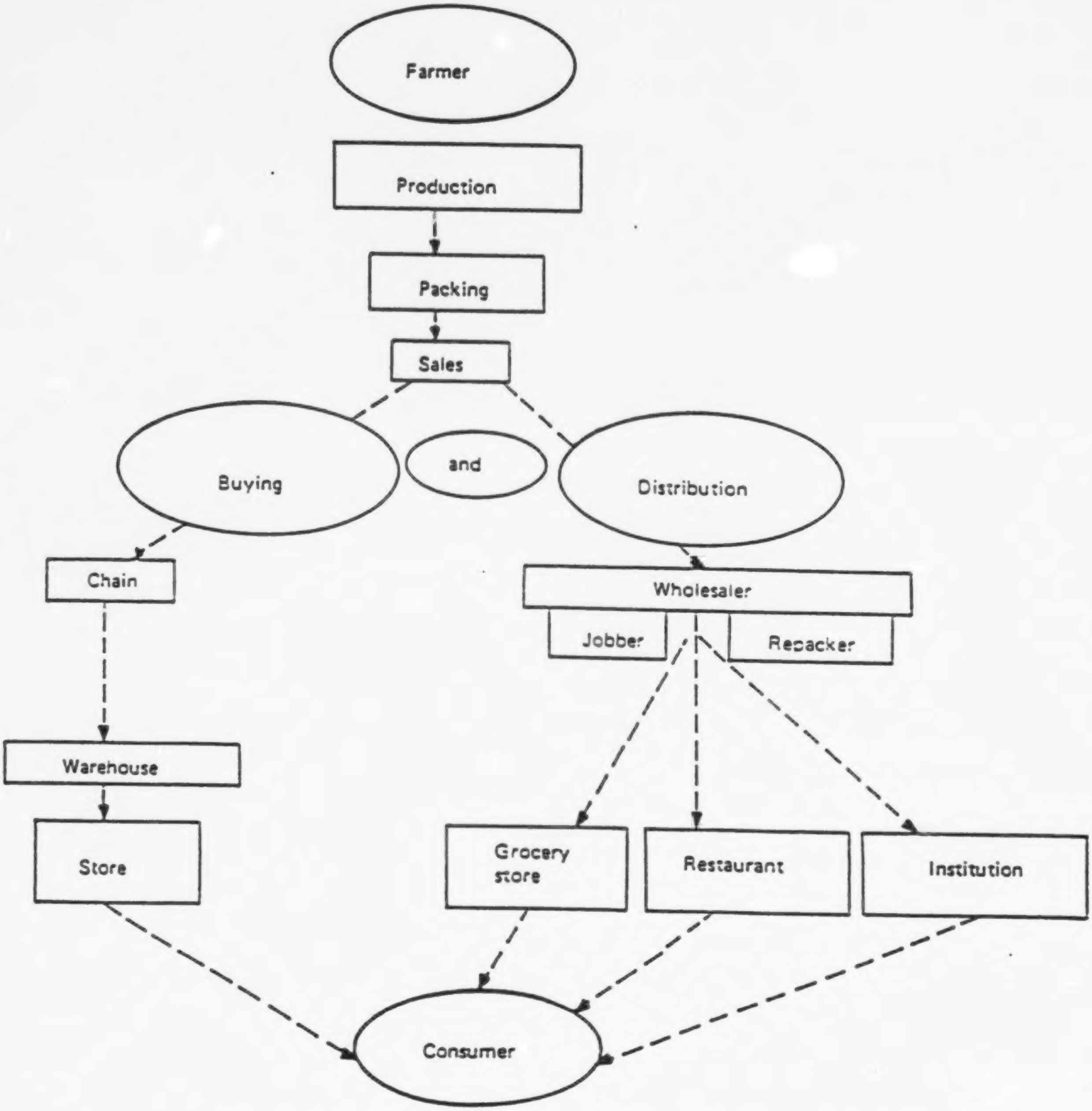
Table 4. Extent of direct marketing within a sample of states (1982 survey)

	Roadside market		Pick-your-own		Farmer's Market (No.)
State	Est. No.	Total Sales ($)	Est. No.	Total Sales ($)	
Texas	910	246,016	450	178,000	5
North Carolina	750	27,700,000	103	3,950,000	52
Ohio	600	35,000,000	55	6,000,000	15
Missouri	450	3,800,000	100	2,120,000	50
Illinois	400	25,000,000	50	-----	50

Source: From Jane Lieberth, Spilling the Beans about Roadside Marketing. Copyright 1982 by American Vegetable Grower, Reprinted by permissions.

[a] California pick-your-own includes fruit with vegetables.

Figure 1. The Marketing System for Alternative Crops


Farmer
Production
Packing
Sales
Buying
and
Distribution
Chain
Wholesaler
Jobber
Repacker
Warehouse
Store
Grocery store
Restaurant
Institution
Consumer

Source: Marketing Alternatives for Small Farmers: Fruits and Vegetables. National Fertilizer Development Center, Tennessee Valley Authority, Muscle Shoals, Alabama.

The Impact of Marketing Opportunities Upon the Role of Agriculture in the Social and Economic Development of the Lower Mississippi River Delta Region

Edward L. Scott

Let me begin by assuring you that I am not one of those large, wealthy, Delta farmers who have all the answers to everything. I am a small farmer who is trying everything I can think of to survive. That is how I got into the catfish business. I was one of the first to realize that cotton is no longer "King."

Webster defines *marketing* simply as "the act or process of buying or selling..." *Webster* defines a *farmer* as one who "cultivates land or crops or raises livestock."

E. Jerome McCarthy defines marketing as the performance of business activities which direct the flow of goods and services from producer to consumer or user in order to satisfy customers and accomplish the company's objectives.

I feel that is where many of our problems lie. We as farmers produce the product and someone else decides how it is to be sold, where it is to be sold and to whom it is to be sold.

There is little doubt that personal selling and advertising are marketing activities, but many business executives would limit the scope of marketing to just personal selling and advertising. They feel that the job of marketing is to "get rid of" the product which has been produced and priced by the production, accounting and financial executives.

When I define marketing as the performance of the activities which direct the flow of goods and services, I mean just that: *direct*. Marketing should begin with the customer, not the plant. Marketing and not production should determine what products are to be made and what crops are to be grown...including decisions about product development, designs and packaging; what prices are to be charged and where and how the products are to be advertised and sold.

We should see marketing as the coordinating force of the total system which is the business itself. *In other words, farmers must play a more active role in the total marketing system.* Marketing the nation's food and fiber is a huge undertaking. It involves a number of functions and is changing from month to month. At one time, marketing consisted largely of transferring commodities between producers and consumers with little product change.

Textbooks on marketing stress how to bring buyers and sellers together; develop price information systems; establish consistent grades and product quality standards; and transport the product. Many firms view marketing as simply "order taking," rather than a complex set of activities designed to produce and distribute a product in the form and place desired by consumers.

Farmers have traditionally produced a given amount and faced a given demand in the marketplace. If production exceeded demand at an initial bargaining price, price declined until the market cleared. Prices were bid up when production fell short. Responses to lower or higher prices occurred in the next production cycle.

In the past, the marketing efforts of farmers were largely confined to discovering the *best* place and time to market their commodities. Schemes were developed, such as forward contracting and futures markets, in an attempt to transfer price risk to others in the marketing system. Producers paid little attention to influencing demand, however, or developing new products to satisfy changing needs.

In the past farmers have not retained ownership of commodities through the marketing process and have usually not been involved in promoting their products. Farmers today have many different obligations and responsibilities. On one hand, a farmer is a family operating trucks, tractors and other farm equipment. They feed livestock, or cultivate and harvest crops. In summary, they are on the farm producing farm products.

On the other hand, consider *Ocean Spray, Sunkist* and *Welch's*. All of these are farmer-owned cooperatives, and they illustrate the *marketing* side of the farmer's business. These widely known brand names and others are among the most effective marketers of branded food products in the U.S.

In 1986, farmer cooperatives had total sales of $58.4 billion, with $41.5 billion of that amount used for marketing farm products. *Farmers use marketing cooperatives for research, manufacturing, processing and brand merchandising.* These cooperatives range in size from small local elevators, cotton gins and packing cooperatives, to large multi-billion dollar regional cooperatives that market nationally and internationally.

The expansion of cooperatives to benefit small family farmers and producers like myself would obviously help many people in the Lower Mississippi River Delta region. If we were able to participate more in the marketing of our products and goods through accessible cooperatives, we would have a better chance of surviving. You may wonder why small farmers and producers don't just join a local cooperative. It is not that simple. All too often, the local cooperatives are controlled and membership and participation is limited by one's economic status and even one's race.

Edward L. Scott opened the only minority owned and operated catfish plant in the U.S. His efficient operation processes rough fish to finished whole fish at a rate of 1,200 pounds of fish per kill floor employee in an eight-hour day. Further processing includes filleting, freezing and packaging.

Roundtable Discussion

Marketing Opportunities

Jesse Harness, Presiding

I. The roundtable discussion began by identifying constraints and venturing recommendations for alleviating these constraints.

Constraints:

Marketing is key to the development of a viable alternative agriculture program in the Delta. A marketing system must be established that will deal with both the long-term as well as the immediate marketing needs. The development of a viable marketing program is limited by the following constraints:

- The physical aspects which include storage, refrigeration, transportation, facilities for processing and operation capital.
- Institutional constraints are the inhibiting factors that affect the relationship between farmers and the various agents in the organization that are a vital part of the marketing system; brokers, commission agents, processors, wholesalers and retailers.
- Coordinated constraints involve communication management expertise and bargaining; financing and reconciliation on terms of trade.
- Policies needed to facilitate the marketing of alternative crops do not exist.

Recommendations:

- Establish an appropriate storage refrigeration and transportation system.
- Develop incentives for encouraging outside processors to locate in the area and for local groups to establish cooperative processing facilities.
- Establish a regionwide production and marketing system that will schedule production according to market demand.
- Establish marketing cooperatives and provide appropriate training for managers that will be required to negotiate with produce buyers, wholesalers and speculative middlemen.
- Establish marketing cooperatives and provide them with resources required to establish a storage and transportation system.

Federal and State Policy Recommendations:

State and federal legislation needs to be enacted to establish policies which will address such issues as credit price support, disaster payments and crop insurance. State, local and federal government must cooperatively establish facilities and infrastructure that will promote expansion of the industry.

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SRDC No. 125

March 1990

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